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Feb. 8th.

DR. HAYS in the Chair.

Twenty-nine members present.

Dr. Rand announced the death at sea, on his return from China, of Captain McMichael, late a member elect of the Academy.

Feb. 15th.

Vice President BRIDGES in the Chair.

Thirty-eight members present.

Papers were presented for publication of the Proceedings, entitled, Observations on the Species of *Nicotiana*, by John Le Conte.

Catalogue of the Coleoptera of Fort Tejon, California, by John L. Le Conte, M. D.

And were referred to Committees.

Mr. Powel read extracts from a letter, giving information in relation to certain fossil bones in the neighborhood of Enfield, North Carolina.

Feb. 22d.

Vice President BRIDGES in the Chair.

Forty members present.

On report of Committees on the Biological Department, the following named papers were recommended for publication in a medical journal.

Observations on the exposed hearts of Animals, by S. Weir Mitchell, M. D.

Observations on the colorless blood-corpuscle, by Wm. A. Hammond, M. D.

The following papers were, on report of the respective Committees, ordered to be printed in the Proceedings :

ICHTHYOLOGICAL NOTICES.

BY CHARLES GIRARD, M. D.

V. We have often had an opportunity to speak of curious traits of organization amongst the fishes of California and Oregon, but we think that the species which is the subject of this paragraph, yields nothing in that respect to those alluded to elsewhere.

Let it be stated at once that it belongs to the blennioid family, as now understood by us, and will enter into the genus *Neoclinus*, as characterised in the "Report upon the Fishes of the U. S. P. R. R. Expl. and Surveys," without any material modification of its diagnosis. And yet when we first beheld this singular creature—prior to any examination of its organic structure—we were far from suspecting its natural affinities to the family to which it belongs in reality. The fish is from eight to nine inches in total length; its body is very much compressed and tapering; the head being about two inches long and deeper than broad, superiorly convex, anteriorly rounded off; the branchial apertures are widely open, continuous under the throat; the mouth is deeply

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cleft ; the pectorals and ventrals, and the fins generally, assume a position and an aspect, not departing from the normal rule in that family. In the characters thus far enumerated, there is nothing to attract very particularly the attention, except, perhaps, the broad exit to the respiratory stream ; and, as far as the dentition is concerned, we have already stated its type by referring the species to the genus *Neoclinus*. But now imagine a fish with all these characters, provided with a mouth very wide and deeply cleft, with the maxillar bones in their usual position, developed beyond all proportions ; so much so that their posterior extremity, which is considerably dilated, extends beyond the branchiostegal apparatus. Between the cheeks and the inner edge of the maxillar bones there is a connecting membrane, which measures about an inch and a half along its posterior edge, and gives the mouth an enormous amplitude when viewed in front ; both maxillars stretched. The same membrane extends from the angle of the mouth, along the lower jaw to near its apex or symphysis, towards which it tapers. That abnormal development of the maxillar bones reminds us of a similar peculiarity of structure in *Opistognathus sonnerati*, upon which species the genus *Opistognathus* was founded. Another species of the same genus *Opistognathus*, however, *O. cuvieri*, does not possess the same feature, and the generic characters of *Opistognathus* are now derived from other structural traits. In treating of *Neoclinus* it will be recollected, we alluded to the natural affinities between these two genera. They differ chiefly by the dentition and the structure of the ventral fins : *Neoclinus* having conspicuous palatine teeth and three articulated rays only to the ventrals ; whilst *Opistognathus* has the palate toothless, or nearly so, and is provided with five articulated rays to its ventral fins. The pectorals, dorsal, anal and caudal fins present the same general appearance in both genera. Even the scales are similar : they being small, imbricated and cycloid in their structure. The air bladder, which is wanting in *Neoclinus*, is extant in *Opistognathus*.

It is more than probable that had we been acquainted with this second species of *Neoclinus* first, we would have been misled as to its real generic characters, and framed a name in allusion to the condition of the upper jaw, such as *Pterognathus* for example, which would have been most characteristic, for that upper jaw is as truly winged as the anterior members of the flying squirrels. We cannot help thinking that Cuvier himself would not have coined the name of *Opistognathus* had he had before him the species which bears his name, instead of that which he dedicated to Sonnerat.

These two genera (*Opistognathus* and *Neoclinus*.) will furnish one of the best themes to ichthyological studies, as they exemplify the fact that *specific characters* may be developed to exaggeration, and become more conspicuous than the *generic characters* themselves.

Returning now to the principal object of this paragraph, which is to record a second species in the genus *Neoclinus*, and to which we give the name of *N. satiricus*, the chief difference between the latter and *N. blanchardi* resides in development of the maxillar bones, above alluded to. The cephalic membranous flaps or tentacles, which we noticed in the species formerly described, do not appear to exist in the present one ; so that their expression will have to be stricken out from the generic diagnosis. The formula of the rays : Br. vi : vi ; D 42 ; A 29 ; C 3, 1, 5, 4, 1, 4 ; V 1, 3 ; P 14, bears a great resemblance to that of *N. blanchardi* ; we have not been able to ascertain how many of the rays of the dorsal fin are simple and unarticulated. The insertion of the ventrals takes place somewhat more in advance of the pectorals than in the species just alluded to.

The color is uniform olivaceous brown, with a bluish black tint prevailing over the sides of the head and the fins. The maxillar membrane is posteriorly white edged, as in *N. blanchardi*.

The only specimen of this species that has come to our knowledge, was caught at a depth of thirty fathoms, in the Bay of Monterey, Cala., and sent to the museum of the Smithsonian Institution by A. S. Taylor, Esq., to whom 1859.]

science is already indebted for some of the rarest ichthyological and carcinological productions of the Pacific coast.

VI. A few months have scarcely elapsed since we stated that no representatives of the sub-order of apod malacopteran fishes had so far been observed along the Pacific coast, west of the United States. We are now in possession from that coast of a fine species, which, according to Kaup's classification, belongs to the family *Ophisuridæ*, and more properly still to the subfamily *Myrophinæ*. Its generical affinities are with *Myrus*, from which it, however, differs by the dentition and the condition of the dorsal fin. The genus to which it belongs may be characterized as follows: Pectoral fins present. Origin of dorsal fin situated near the occiput, in advance of the base of the pectorals. Head large, subconical, lower jaw shorter than the upper. Teeth granular, disposed upon elongated patches, on the jaws, palate and nasal bones. Eyes well developed. Gill apertures lateral, of moderate development, and placed vertically in advance of the pectoral fins. Body scaleless.—A specimen from Adair Bay, Oregon, measures about two feet in total length. Its body is subcylindrical, somewhat compressed, and tapering gradually backwards. The origin of the dorsal fin takes place near the occipital region, upon a vertical line somewhat nearer the base of the pectorals than the posterior rim of the eye. The beginning of the anal fin is nearer the extremity of the snout than the tip of the tail. The pectoral fins are subelliptical in their outline, broader than long. The head, from the apex of the rostrum to the branchial aperture, measures about two inches, or else the twelfth part of the total length; it is subconical, anteriorly attenuated, the upper jaw projecting considerably beyond the lower one. The gape of the mouth is nearly horizontal; its angles extending considerably beyond the orbits. The teeth are subconical or hemidiscoid, granular or sand like in general appearance and of various sizes; very small ones occupying the intervening space between the largest. They are disposed upon multiple series: three of these may be observed towards the anterior portion of the dentary (lower jaw), whilst one only extends backwards along that bone. There is a double series of them at the upper jaw; a double series also along the shaft of the vomer, the latter being continuous forwards with the nasal patch, where three or four series exist. The nostrils approximate the apex of the rostrum; the upper ones are very small, and placed opposite the inferior ones, which are conspicuous and tubular. The eyes are subelliptical and well developed; their longitudinal diameter entering twice upon the rostral distance anterior to the orbits.

The ground color is brownish olive, except the throat and belly which are of a dull whitish tint. Rounded, dark brown spots, rather diffuse at their periphery, constitute four longitudinal series from head to tail, leaving but the abdominal region unicolor, for the throat exhibits small, blackish spots. The spots about the head are likewise a good deal smaller and of a deeper hue than along the rest of the body. The fins are olivaceous; the anal and pectorals being unicolor, whilst the dorsal fin is edged with white and exhibits moreover a series of spots similar to those observed on the body.

We have selected the name of *Myrichthys tigrinus* for the above species. The specimen upon which the foregoing observations were made, was caught in Adair Bay, Oregon, by Capt. C. P. Stone, and presented to the Museum of the Smithsonian Institution.

VII. A few years ago we have established the genus *Cyprinella* to include sundry species of small cyprinoid fishes apparently very numerous in the rivers and streams lying westwardly to the main bed of the Mississippi, as well as in Texas and the Mexican provinces adjoining the Rio Grande del Norte (Rio Bravo). Up to the time our reports upon these fishes passed through the press, we had not met with any species of that genus east of the Alleghany range. We are now in possession of numerous specimens of various sizes, from an inch to three inches in total length, which appears to be the full grown

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condition of the species. They were obtained from the waters of Rock creek, which flows into the Potomac river nearly opposite Analostan island. In general appearance they resemble young shiners (*Luxilus americanus*), for which they might easily be taken by superficial observers. Upon a closer examination, however, the generic features, as pointed out elsewhere, become so obvious, that when once observed, they can never fail to attract attention. The body is elongated and subfusiform in profile; the peduncle of the tail being stoutish. The head enters four times and a half in the total length. The eye is of moderate development and circular in shape; its diameter entering about four times in the length of the side of the head. The snout is subconical, and the fact of its projecting beyond the lower jaw is a trait partaken more or less by all the species of this genus; the gape of the mouth is directed somewhat obliquely upwards; the posterior extremity of the maxillar bone corresponds to a vertical line drawn between the nostrils and the anterior rim of the orbit. The dorsal fin is rather elevated, superiorly rounded off; its anterior margin is equidistant between the apex of the snout and the last scales at the base of the caudal fin. The origin of the ventral fins takes place somewhat anteriorly to the dorsal. The anal fin is deeper than long. The ventrals are broader and shorter than the pectorals. The scales are larger than those of the shiner (*Luxilus americanus*) and the lateral line, though deflexed, is much less so than in the fish just alluded to. The color is uniformly silvery; greyish olive along the dorsal region, and of a metallic reflect over the rest of the body and sides of the head. The fins are unicolor, except the dorsal which exhibits a black spot at its posterior margin.

The species referred to in this paragraph resembles *C. whipplii* most, with this chief difference, that the dorsal fin is less elevated, and the ventral fins situated somewhat more anteriorly. The minor differences will suggest themselves upon the comparison of their respective diagnosis. We think that the name of *C. analostana* may, with great propriety, be bestowed upon it.

VIII. Our friend, Townend Glover, has just brought us from Palatka, East Florida, a Cyprinodont, of the genus *Fundulus*. The specimen is unique, and belongs to the male sex. Compared to *F. grandis*, of which it has the length, the body is more slender, and subfusiform in general appearance. The greatest depth, taken at the origin of the ventral fins, is equal to the length of the head, which enters four times and one third in the total length. The scales which cover the upper surface of the head and the opercular apparatus, are of moderate development. The head is subpyramidal, the snout tapering, and the mouth rather small. The eye is subcircular, of medium size; its diameter entering about four times and a half in the length of the side of the head. The dorsal fin is longer than high; it is higher posteriorly than anteriorly, and its origin is nearer the apex of the snout than the extremity of the caudal fin. The latter is subtruncated or subconvex, and constitutes nearly the sixth of the total length. The anal is deeper than its base is long, subtriangular towards its extremity which projects further back than the dorsal. The ventrals are broad and short, not extending quite to the vent, which is situated near the anterior margin of the anal fin. The pectoral fins are likewise broad and short, although much more developed than the ventrals; their posterior extremity is nearly even with a vertical line drawn at the origin of the latter fins. The rays stand as follows:—D 17; A 13+1; C 5, 1, 8, 7, 1, 5; V 6; P 17.—The scales are much deeper than long, anteriorly truncated and rounded upon the rest of the periphery. Radiating furrows are observed upon their anterior section only. The ground color is yellowish brown, quite dark along the dorsal region, spotted with black; whitish and unicolor beneath. The spots corresponding to the scales, upon the line of their intersection. The dorsal and caudal fins are likewise spotted, and assume a reticulated appearance. The anal and the ventrals being yellowish and unicolor, the edge of the anal alone is blackish, whilst the pectorals are greyish olive.

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The throat and inferior surface of the head exhibit the same tint as the abdomen. The sides of the head are yellowish brown, whilst its upper surface is rather dark and blackish. Finding no species on record with which the present one can be identified, the name of *Fundulus seminolis* may not be deemed inappropriate to designate it henceforward.

IX. The fish which we have formerly described (Proc. Acad. Nat. Sci., Philada. vi. 1853, 389), under the name of *Fundulus tenellus*, from specimens obtained at Prairie Mer Rouge, La., and Russellville, Ky., belongs to the genus *Zygonectes*, proposed by Professor Agassiz (Amer. Journ. of Sci. and Arts, second series, xvi. 1853, 135), so that its present systematic name will be *Z. tenellus*. We should not be surprised at all to hear that the latter is identical with either one or the other of the sundry species of that genus, which Professor Agassiz has named without characterizing (Amer. Journ. of Sci. and Arts, second series, xvii. 1854, 353), except by alluding to their coloration. The characters of the genus itself, were never defined, so that ere long, we may expect to encounter as much difficulty in identifying its species, as we meet with those recorded in the "Ichthyologia Ohiensis."

X. The party under Lieut. J. C. Ives, has brought home a very remarkable species of *Hydrargyra*, which was collected "between Fort Defiance and Fort Union, New Mexico." It is probable, therefore, that it was caught in one of the upper affluents of the Rio Grande del Norte (Rio Bravo).

The average size of the specimens now before us is about three inches, in males as well as in females. The sexual differences reside, as usual in this genus, in the dorsal and anal fins, which are more developed in the male than in the female. The body is elongated, compressed, and subfusiform in profile; the back being slightly arched. The head is subpyramidal, very much depressed above, entering about four times and a half in the total length, and apparently somewhat smaller in proportion in the female than in the male. The eye is subelliptical; its longitudinal diameter being contained four times, or a little more, in the length of the side of the head. The dorsal fin is longer than high; its base entering six times and a half in the total length; its origin, in the male, is nearly equidistant between the apex of the snout and the posterior margin of the caudal, whilst in the female it takes place much more posteriorly. The insertion of the anal fin is the same, with reference to the dorsal in either sex, but, since the posterior portion of the dorsal, in the male, is more developed than in the female, the consequence is that it is nearly even with the posterior extremity of the anal, whilst in the female, the latter stretches considerably beyond the extremity of the dorsal. The anal fin itself is as long as deep in the male, and deeper than long, in the female; exteriorly rounded off in either sex. Its anterior margin, in the female, is overlapped by the membranous expansion of the genital foramen. The caudal fin is subtruncated. The ventrals are short and broad; their extremities reaching the anterior margin of the anal in the male, which is not the case in the female. The pectorals are of moderate development, subovate in their outline, approximating by their extremity the insertion of the ventrals in the male, remaining more apart in the female. The numbers of the fins rays are; δ D 13; A 14; C 6, 1, 7, 7, 1, 6; V 5; P 17. The scales are comparatively smaller than in *H. similis*, and differ furthermore from those of the latter species in being much deeper than long. They are subquadrangular in shape, and furrowed upon their anterior section alone. The ground color of the upper region of the head and body is olivaceous-brown, with a blackish, small spot upon either scale, giving that region quite a dark appearance: whilst a yellowish tint prevails along the sides and beneath. Transverse, narrow black bars or bands, much more conspicuous in the male than in the female, may be observed from the insertion of the pectorals to the base of the caudal, about sixteen in number, and extending from the dorsal line to the belly. The intervening spaces are somewhat wider than

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the bands themselves. The fins are greyish olive, unicolor; the anal and the ventrals, in the female, being oftentimes of a lighter tint.

In allusion to the numerous transverse lateral bars, we shall call this species *Hydrargyra zebra*.

XI. In 1853, (Amer. Journ. of Sci. and Arts, second series, xvi. 135), the genus *Heterandria* was proposed to include two small species of fish inhabiting the fresh water ditches of South Carolina. All that we were told about their generical characters had reference to the anal fin, which in the male sex, is very slender and deep and inserted more anteriorly than in the female. That difference between the sexes suggested the appellation of *Heterandria*. Most genera of the so called Cyprinodonts, however, exhibit similar sexual differences in a greater or lesser degree.

In the same year, 1853, we described four species under the head of *Heterandria*, three of which we have recently* referred to the genus *Gambusia*, and one to the genus *Girardinus*, proposed by Prof. Poey, of Havana, to include sundry Cuban species. The genus *Limia*, of the same author, would likewise fall under the head of *Heterandria*, as indicated. The genera just alluded to of the Cuban naturalist, not only cover the same ground as *Heterandria*, but have priority over the latter.

The following characters may be assigned to the genus *Gambusia*. Mouth protractile, rather cleft and nearly horizontal, the lower jaw projecting somewhat beyond the upper. An external series of rather conical, curved and conspicuous teeth, behind which may be observed a patch of velvet like teeth. The origin of the anal fin is situated in advance of the anterior margin of the dorsal, deeper and differently constructed in the male than in the female. The branchiostegal rays numbering six on either side; the branchial orifices being continuous under the throat. Prof. Poey states that the intestine is short, and the liver large.†

Amongst the fishes recently collected by Mr. T. Glover, at Palatka, East Florida, we find specimens of a species of *Gambusia*, which upon comparison with the specimens of *Heterandria holbrookii*, Ag. (MS.) collected by ourselves in Charleston, S. C., prove to be identical with the latter.

The largest female specimen which has come under our observation, measures two inches in total length, in which the head enters four times and a half, and the caudal fin six and a half times. The head itself is very much depressed and sloping towards the snout, giving the latter a wedge-shaped appearance, a trait not altogether peculiar to the species of this genus, for we observe it in *Pacilia*, *Limia*, *Girardinus*, and to a certain degree in *Fundulus* and *Hydrargyra*. The eye is very large, subcircular; its diameter entering but three times and a half in the length of the side of the head. The body is subfusiform in profile when not otherwise distorted by the presence of ova or embryos in the abdomen. The origin of the dorsal fin is much nearer the extremity of the caudal than the tip of the snout; the fin itself being higher than long. The anal fin is larger than the dorsal, deeper than long, exteriorly subtruncated, its anterior margin being nearly equidistant between the tip of the snout and the extremity of the caudal fin. The ventrals are small, short and broad when expanded; their tips extending as far as the vent when the belly is not otherwise distended. The pectoral fins are rather large, projecting beyond the insertion of the ventrals when in their natural condition. The formula of the fins is as follows: D 8; A 9; C 4, 1, 6, 6, 1, 5; V 6; P 1, 10.—

The largest male specimen which we have examined, measures about an inch and a quarter. The body is quite slender, and fusiform in profile, the head holding the same proportions towards the total length as in the female

* U. S. and Mex. Boundary Report, vol ii. Ichthyology, pp. 71 and 73.

† Memorias sobre la Historia Natural de la isla de Cuba, i. 1851, 390.

sex. The origin of the dorsal fin is nearly equidistant between either extremities, whilst that of the anal is equidistant between the apex of the snout and the insertion of the caudal fin. The ventrals hold the same position towards the anal as in the female sex. The pectorals are proportionately longer. The fins exhibit the same number of rays as in the female; the anal differs in its structure, inasmuch as the second and third rays are much stouter and more elongated than the rest.

The scales are well developed, deeper than long, posteriorly rounded off, anteriorly truncated, with radiating furrows upon the latter section alone. The color is uniform olivaceous brown, lighter beneath than above; the dorsal and caudal fins exhibiting transverse blackish lines.

Gambusia holbrooki is very abundant in ponds and ditches of fresh water of South Carolina, and as already stated, was also collected in Florida. Specimens from the latter locality are somewhat larger than those from South Carolina.

XII. The smallest fish so far known to inhabit fresh waters is *Heterandria formosa*, Ag. (MS.), which is found associated with the preceding species, in South Carolina, where we have observed it ourselves, as well as in Florida, whence Mr. Glover has brought specimens. When full grown the female measures about an inch in total length, and the male six-eighths of an inch; the specimens from Florida being somewhat larger than those from South Carolina.

The body is compressed and fusiform in profile; the head constituting a little less than the fourth of the entire length. The snout is very short and rounded off, the mouth quite protractile, with the lower jaw slightly projecting beyond the upper one. The eyes are very large and subcircular; their horizontal diameter entering about twice and a half time or at most thrice in the length of the side of the head. The dorsal fin is higher than long; its anterior margin being nearly equidistant between the apex of the snout and the extremity of the caudal fin. The anal is deeper than long, and somewhat smaller than the dorsal. The ventrals are very small, short and broad, extending as far as the vent. The pectorals are elongated and project beyond the origin of the ventrals. The fins in the male sex resemble those of the female just alluded to, except the anal which is inserted more anteriorly, its second and third rays being much more developed than the rest, thus giving that an appendage-like appearance. The scales are comparatively very large; seven longitudinal series only being observed across the flanks of the female sex. They are deeper than long, and furrowed upon their anterior section alone. The ground color is olivaceous, or else yellowish brown above; the belly being of a light lemon tint. A black streak extends from the snout along the middle of the flanks to the insertion of the caudal fin. From six to eight brownish black vertical streaks may be observed along the sides intersecting the lateral streak, thus subdividing the surface of the body into quadrangular areas. A jet black spot exists at the base of the caudal fin, also at the anterior margin of the dorsal and anal, except in the male sex in which the latter fin is of a uniform yellowish tint. The caudal, ventrals and pectorals are olivaceous and unicolor in either sex.

The species thus briefly described, belongs to the genus *Girardinus* of Prof. Poey. It is characterized by a protractile, rounded, and scarcely cleft mouth, the lower jaw projecting somewhat beyond the upper one. There is but one series of teeth which are approximated, moveable, slender at their base and extremely acute. The anterior margin of the anal is situated somewhat in advance of the dorsal, and varying in structure according to the sexes. The caudal is rounded as usual. The branchiostegal rays are five on either side, and the branchial orifices continuous under the throat. The intestine is slender, elongated, convoluted, and the liver small.*

* *Memorias sobre la Historia Natural de la isla de Cuba*, i. 1851, 390.

Girardinus formosus, is quite as common in ponds and ditches, as the species treated of in the preceding paragraph, especially about the rice fields and inlets of rivers and brooks. Their great abundance has brought them to the notice of every planter at the South, where these fishes are met with.

XIII. A "blind fish, taken from a well near Bowling Green, Ky.," was recently sent to the Smithsonian Institution by J. E. Younglove, Esq.

In its general appearance and chief structural traits it resembles that which occurs in Mammoth cave, with this curious difference, that the ventral fins are wanting: we will call it *Typhlichthys subterraneus*.

Some years ago a fish (*Chologaster cornutus*) was found in the ditches of the rice fields of South Carolina, in all appearances akin to *Amblyopsis spelæus*, having the same advanced position of the vent, the body being covered with similar scales, but the ventral fins are wanting and the eyes fully developed.*

We have not yet been informed of the nature of the dentition of *Chologaster cornutus*. That of *Typhlichthys subterraneus* is similar to the dentition of *Amblyopsis spelæus*, and consisting of narrow patches of acute and very minute teeth upon the premaxillar bones, the palatines and the lower jaw.

These three genera have for common traits of structure: a body covered by cycloid scales, a dorsal and an anal fin opposed to one another, a rounded off, or sublanceolated caudal fin, the position of the vent anterior to the base of the pectoral fins. The shape of the mouth and the dentition are in all probabilities alike. The generical characters consist: in *Amblyopsis*, the want of eyes and the presence of ventral fins; in *Typhlichthys*, the want of eyes and ventral fins, both, and in *Chologaster*, the presence of eyes and the want of ventral fins.

The propriety of establishing three genera upon characters apparently transitory may be questioned by those who believe in the doctrine of transformations. Were *Chologaster* provided with ventral fins, and to differ from *Amblyopsis* by the presence of well developed eyes alone, the plausibility of a transformation of that organ according to circumstances might seduce many. But then again comes *Typhlichthys*, which holds an intermediate position, perfectly eyeless and deprived also of ventral fins.

The largest specimens which we have seen of *Typhlichthys subterraneus* measure a little over one and a half inch. The head which enters about three times and a half in that length, is depressed, and broader than deep. The mouth is proportionally large and transverse, the lower jaw being somewhat longer than the upper. Minute and acerated teeth may be observed upon the lower jaw, the premaxillar bones, and on the palatines also, disposed upon narrow patches. The eyes exhibit no visible traces of their presence, the orbit being filled up by a muscular tissue. The branchial apertures are separated under the throat by a narrow isthmus, the branchiostegal rays being six in number on either side. The body anterior to the dorsal and anal fins is sub-cylindrical, whilst it is compressed and tapering posteriorly; its entire profile being subfusiform. The vent is situated in advance of the pectoral fins and close to the branchial isthmus. The height of the dorsal fin is greater than its base; its anterior margin is nearer the extremity of the caudal fin than the apex of the snout. The caudal is rounded off posteriorly or sublanceolated, the central rays being the longest. The anal fin is inserted nearly opposite the dorsal, or else somewhat more posteriorly; it is likewise deeper than long. The ventrals, as alluded to above, are entirely wanting. The pectorals are slender and elongated; their middle rays being the most developed. The number of the rays in the various fins is as follows: D 7; A 8; C 4, 1, 6, 6, 1, 5; V 0; P 11; a formula very similar to that of *Amblyopsis spelæus*. The scales are very small, subimbricated, firmly adhering to the skin without being imbedded in it as in the species just alluded to. They are rather

* Amer. Jour. of Sc. and Arts, Second Series, xvi, 1853, 135.

deeper than long, rounded off, broader anteriorly than posteriorly, exhibiting distant concentric lines of growth and very wide radiating furrows which affect the anterior portion of the scale only. The head is scaleless, but its upper surface as well as its sides, exhibit transverse cutaneous, finely granular ridges. A few of the latter may be observed along the flanks, over the scales, although much less conspicuous than on the head. The color is a uniform dull yellowish white tint.

XIV. The "sun fish," which we have formerly described under the name of *Promotis obesus*,* belongs now to the genus *Bryttus*, as characterized in our Report upon the Fishes of the U. S. P. R. R. Explorations and Surveys. Its systematic name, therefore, will be henceforwards *Bryttus obesus*.

XV. While assorting some of the fishes which the Smithsonian Institution had been receiving during the past years, a specimen of the genus *Megalops* was found in one of the kegs sent from the Tortugas, Garden Key, Fla., by Lieut. H. G. Wright. It belongs to the same species as that which we have formerly described under the name of *M. elongatus*.

It is three feet and three inches long, regularly subfusiform in its profile the head constituting the fifth of the total length. The greatest depth, which is seven inches, corresponds to the anterior portion of the body, nearly midway between the pectoral and the ventral fins. The posterior extremity of the maxillar bone extends considerably beyond a vertical line which would intercept the hind rim of the orbit. The eyes are subcircular, their diameter entering five times in the length of the side of the head.

The anterior or external ray of all the fins is very stout, considerably stouter than the other rays, and usually the longest also. By anterior or external ray is understood that which begins the series of developed rays, and not the rudiments of rays that occur at the anterior or external margin of the fins. The pectoral fins are lanceolated, but their extremity does not extend as far as the origin of the ventrals. The latter are inserted altogether in advance of the dorsal, so that when expanded, their posterior edge, which is linear, will meet a vertical line dropped from the origin of the dorsal. The caudal is deeply furcated and somewhat shorter than the head. The anal is longer than deep, exteriorly concave or crescentic, the posterior rays extending further back than the posterior, very elongated ray, of the dorsal fin. The latter is much higher than long, somewhat concave upon its upper margin. There are ten longitudinal series of scales between the dorsal and the ventral fins. The total number of scales upon a girdle encircling the body in advance of the insertion of the ventrals—being also its greatest depth—is twenty two, ten on either side, and two odd series, a dorsal and an abdominal series. Small scales may be observed upon the anal and caudal fins to near the extremities of their rays. The numbers of the rays in the various fins correspond to those already given; we need but to state that those of the caudal may thus be expressed: C 4, 1, 9, 9, 1, 3, giving twenty developed rays and nine, perhaps more, rudimentary ones.

XVI. The brooks and streams which mingle their waters with that of the Potomac river have furnished us with a representative of the Etheostomid family, of an apparently new generic type, the characters of which may be thus expressed: body subfusiform; head subconical; snout rather blunt, the upper jaw protruding beyond the lower one, thus giving the mouth an inferior position. The latter is of moderate size, its gape nearly horizontal, surrounded with conspicuous lips. Opercular apparatus scaly, cheeks and throat bare. Dorsal fins distinct; first dorsal lower than the second, and longer than high. Anal smaller than the second dorsal. Caudal fin posteriorly truncated or subtruncated. The genus we will call *Arlina*.

* Proc. Bost. Soc. Nat. Hist. v. 1844, 40.

The largest specimens which we have, so far observed, measure about two inches in total length, the body tapering gradually away towards the insertion of the caudal fin. The head, which constitutes the fifth of the entire length, is subconical in general appearance, the snout being declivous and blunt and overhangs the lower jaw. The anterior nostril is nearer the eye than the margin of the upper jaw. The eye, itself, is large and subcircular, approximating the upper surface of the head; its diameter enters nearly four times in the length of the side of the head, twice behind its posterior rim and once in advance of its anterior rim. The posterior extremity of the maxillar bone corresponds to a vertical line drawn at the anterior rim of the orbit. The first dorsal is convex in its outline, it is separated from the second by an appreciable space. The second dorsal, which is higher than the first, is longer than high, its upper margin being subconvex anteriorly and nearly straight posteriorly. The caudal fin constitutes about the fifth of the total length. The anal is longer than deep and nearly of equal depth throughout; the vent, which is placed close to its anterior margin, is opposite the origin of the second dorsal. The insertion of the ventrals takes place in advance of the anterior margin of the first dorsal; they are slender and elongated, but their extremities are far from reaching the vent. The ventrals are well developed, posteriorly rounded, and project somewhat beyond the ventrals, being even with a vertical line drawn at the terminus of the first dorsal fin. The formula of the rays is as follows:—D ix; 14; A 10; C 4, 1, 7, 6, 1, 5; V 15; P 13.—The ground color is yellowish with a triple series of blackish blotches, one along the back, and one on either side immediately beneath the lateral line, which runs along the sixth series of scales, counted from above. During life, the intervening space between the lateral blotches is of a metallic green as well as the cheeks. A black spot may also be observed upon the opercular apparatus. A vertical black streak beneath the eye, and one on either side of the snout. The dorsals, the caudal and pectorals are transversely barred with black; the anal and pectorals being unicolor.

We propose calling this little fish *Arlina effulgens* in allusion to its bright color during life.

XVII. The Potomac river, in the neighborhood of Washington, has furnished us with another representative of the *Etheostomid* family, of which constitutes likewise a new generic type, related to *Hadropterus* and *Hyostoma*. It differs from *Hadropterus* by the anal fin, which is smaller than the second dorsal, and from *Hyostoma* by the contiguity of the dorsal fins. It is also allied to *Boleosoma*, from which it may be distinguished by a scaly throat and a truncated caudal. The natural characters of this genus, to which we give the name of *Estrella*, may be thus resumed. Body subfusiform and compressed. Head subconical, well developed, rather blunt. Mouth of moderate size, somewhat protractile, with its gape horizontal; lower jaw shorter than the upper. Opercular apparatus, cheeks and throat scaly. First dorsal fin nearly as high as the second and contiguous to it. Anal smaller than the second dorsal. Caudal fin truncated.

The species is not uncommon, the largest specimens which we have observed, measure about three inches and a quarter. The head forms a fifth of the total length. The nape and occipital region constitutes an inclined plane from the orbits to the origin of the first dorsal fin. The eyes are very large, fubelliptical in shape; their horizontal diameter entering about three times in the length of the sides of the head; less than once in advance to the anterior rim of the orbit. The posterior extremity of the maxillar bone extending as far as a vertical line drawn in advance of the pupil.

The first dorsal fin is much longer than high, superiorly convex, its membrane being contiguous to the second dorsal. The latter is likewise longer than high, but it is higher anteriorly than posteriorly, thus the upper margin of that fin, which is subconvex or nearly linear, is nevertheless declivous

backwards. The anal fin is longer than deep, convex upon its edge; its anterior margin being placed somewhat behind a vertical line drawn at the anterior margin of the second dorsal, but the same line intersects the vent. The caudal fin, which is a little shorter than the head, is truncated upon its posterior margin. The ventrals are of moderate development compared to the other fin, their middle rays being the longest; these fins assume a spear-shaped appearance in the state of rest. Their extremities are far from reaching the vent. The pectorals, much larger than the ventrals, assume the same shape as the ventrals, under similar circumstances, but when expanded, their posterior margin is quite convex. Their extremities project beyond those of the ventrals, although they do not reach a vertical line intersecting the vent. The rays of the fins are:—D ix; 15+1; A 11; C 10, 1, 7, 7, 1, 9; V 1, 5; P 13.—The scales are of moderate size, deeper than long, anteriorly truncated and posteriorly rounded, exhibiting radiating furrows upon their anterior section, and numerous, slender, needle-like pectinations upon their posterior margin. The lateral line constitutes the seventh series of scales, counted from the second dorsal fin.

The ground color is yellowish brown, the dorsal region being maculated with blackish brown, whilst the ventral region is unicolor. A series of large blotches may be observed along the dorsal line affecting both sides of the back, and a series of smaller blotches along the lateral line. There is also a black streak on either side of the snout, and a vertical one beneath the eye. The caudal and pectorals are transversally barred with black, the dorsals irregularly vermiculated, giving these fins a checkered appearance. The first dorsal is moreover provided with a jet black spot upon its anterior edge, between the first and second rays. The anal and ventrals are blackish, the tint being lighter at the base of these fins than towards their periphery.

The black spot at the anterior margin of the first dorsal fin, has suggested the specific name of *E. atromaculata*, by which we propose to designate this fish.

XVIII. A third, and much larger species of *Etheostomid* occurs in the waters of the Potomac river. It is identical with the one from the Susquehanna river, described by Prof. Haldeman under the name of *Percina nebulosa*.*

XIX. *Etheostoma caprodes* of Rafinesque, is very closely allied to *Percina nebulosa*, so closely, indeed, that we are not yet prepared to point out the differences with a sufficient degree of accuracy. But whatever it may be *Etheostoma caprodes* must be referred to the genus *Percina* of Haldeman, as having priority over that of *Pileoma* of DeKay. Both of these genera were published in 1842, but since *Percina* is quoted by DeKay,† it evidently shows that it was issued from the press before *Pileoma*. That the genus *Percina*, as first constituted, contained heterogeneous species, is no ground for rejecting it altogether, and the species first enumerated must be considered as its type.

XX. Hence, should *Pileoma semifasciatum* prove specifically distinct from *Percina nebulosa*, it will be the third species of the genus *Percina* under the name of *Percina semifasciata*.

XXI. The *Etheostomid* from Lake Superior, described as *Pileoma zebra*, is to be a fourth species of *Percina* under the appellation of *Percina zebra*.

XXII. Finally a fifth species of the genus *Percina* was described by us in the "Ichthyology of the U. S. and Mexican Boundary Survey," under the name

* Journ. of the Acad. of Nat. Sci. Philada. viii. 1842, 330.

† New York Fauna, Part iv. 1842, 162.

of *Pileoma carbonaria* which is to be designated henceforwards under that of *Percina carbonaria*.

XXIII. We propose now to characterize a new genus of Etheostomid under the name of *Oligocephalus*, as follows: Head small and subconical; mouth terminal, of moderate size, not protractile; jaw equal and provided with slender, acerated and conspicuous teeth, disposed upon multiple series, the external series much larger than the inner series. Opercular apparatus, cheeks and throat scaleless. First dorsal fin lower than the second, longer or nearly of the same length, and contiguous. Anal much smaller than the second dorsal, and provided anteriorly with two small spiny rays. The external ray of the ventral fins is likewise a small spine. Caudal, posteriorly rounded off or else convex. To this genus we now refer *Pecilichthys lepidus* figured in the Report of the U. S. and Mex. Boundary Commission. The first dorsal is represented as being widely separated from the second, whilst in fact, its membrane reaches the anterior margin of the latter fin. We shall therefore record it in future under the name of *Oligocephalus lepidus*.

XXIV. A species allied to the preceding one, inhabits the hydrographic basin of James river, Va. It reaches nearly the same size, that is about two inches long. Its body is quite compressed, subfusiform in profile, maintaining its depth towards the insertion of the caudal fin. The head enters nearly four times and a half in the total length. The gape of the mouth is slightly oblique; the posterior extremity of the maxillar bone corresponding to a vertical line drawn in advance of the pupil. The diameter of the eye enters about four times in the length of the side of the head. The base of the second dorsal fin is nearly equal to that of the first. The base of the anal fin is nearly equal to its deepest rays. The ventrals are lanceolate in shape; whilst the pectorals are subelliptical in their outline, their extremities projecting beyond those of the ventrals. The formula of the fins is as follow:—D VII; 13; A II, 7; C 6, 1, 6, 7, 1, 5; V I, 5; P 13.—The scales are rather small, somewhat deeper than long, finely pectinated posteriorly, with radiating furrow at the anterior section only. The lateral line constitutes the eighth series of scales, counted from the second dorsal fin. The ground color is reddish brown, transversely maculated with blackish spots. The second dorsal fin and the caudal are transversely barred with black upon a light olivaceous ground. The first dorsal, the anal, the ventrals, and the pectorals are of a uniform light olive tint. A jet black spot may be observed immediately above the insertion of the pectorals close to the thoracic arch, and has suggested the name of *Oligocephalus humeralis*, by which we propose to designate this species.

XXV. The species from Walcott, Wayne Co., N. Y. described by my friend, Dr. H. R. Storer, under the name of *Etheostoma linsleyi*,* belongs to the genus *Oligocephalus*, as characterized above. I have in my possession authentic specimens of the same. It is a much slenderer fish than the two foregoing species, and like *O. humeralis*, is provided with a black spot above the pectoral fins, close to the thoracic belt. A careful description of it having been given by its author, we need simply refer to it for the present. We have recorded it under the appellation of *Oligocephalus linslii*, in the monograph we prepare upon that family of our fresh water fishes.

XXVI. Amongst the fishes collected by Major B. Alvord, at Fort Gratiot, Lake Huron, there is a species of Etheostomid, the generic characters of which remind us somewhat of those given to the genus *Hadropterus*. The opercle and cheeks, however, are scaleless, as well as the throat, which is minutely prickly. The first dorsal fin is longer and lower than the second, which is equal to the

* Proc. Bost. Soc. Nat. Hist., iv. 1851, 37.

anal. The caudal is emarginated posteriorly. The species itself being yet undescribed, we shall call it *Alvordius maculatus*. The specimens before us measure two inches and three quarters. The body is elongated, rather slender and subfusiform. The head is subconical, entering about four times and a half in the total length. The eye is well developed; its diameter being contained four times in the length of the side of the head; once in advance of its anterior rim. The posterior extremity of the maxillar bone extends to a vertical line drawn within the anterior rim of the orbit, not quite in front of the pupil. The lower jaw is somewhat shorter than the upper. The first dorsal fin is much longer and lower than the second, to which it is nearly contiguous. Its upper margin is convex. The second dorsal is longer than high, diminishing gradually backwards. The caudal, which forms about the sixth of the total length, is somewhat emarginated posteriorly. The anal is placed opposite the second dorsal, and nearly equal to it in size and shape. The ventrals are sublanceolated and rather short; their posterior extremities being even with those of the pectorals, which are subelliptical in their outline. The formula of the fins, reads.—D xiv; 13; A 1, 10; C 5, 1, 7, 6, 1, 8; V 1, 5; P 14.—The scales are rather small, deeper than long, anteriorly subtruncated, posteriorly rounded, with radiating furrows upon the anterior section only, and fine pectination upon the posterior margin. A series of larger scales conspicuously toothed posteriorly, may be observed along the ventral line between the vent and the extremities of the ventrals. The ground color is reddish brown, the dorsal region being tessellated with blackish spots, whilst a series of black patches may be observed on either side, larger and less numerous in the male than in the female. A black streak intersects vertically the eye. The fins in the male are unicolor, except the first dorsal, which is black, spotted at the base. In the female sex, the caudal exhibits transverse blackish lines. The inferior regions are unicolor in either sex.

XXVII. In 1852, E. O. Dayton, Esq., sent to the Smithsonian Institution, amongst other fishes, a species of Etheostomid, which we referred at that time to an undescribed genus. Subsequently, the genus *Catonotus* was published, answering to it. The species being still unknown, we propose to call it *C. fasciatus*. The specimens are a little short of three inches, the head entering about four times and a half in the total length. The gape of the mouth is oblique, the posterior extremity of the maxillar bone reaching a vertical line drawn immediately in front of the pupil. The diameter of the eye enters five times in the length of the side of the head. The first dorsal is very low and equal in length to the second, which is superiorly convex, and as high posteriorly as anteriorly, the tip of the posterior rays extending almost to the insertion of the caudal. The anal fin is much smaller than the second dorsal, and longer than deep. The caudal is rounded off. The ventrals are rather small and subovate, whilst the pectorals are subelliptical, and extend further back than the ventrals, either of which being very far from attaining the vent. The formula of the fins is:—D viii; 15; A ii, 8; C 4, 1, 7, 6, 1, 4; V 1, 5; P 13.—The scales are small, subcircular, rather deeper than long, minutely and inconspicuously pectinated upon their posterior margin, with radiating furrows upon their anterior section alone. The lateral, which is nearer the back than the belly becomes obsolete from the origin of the second dorsal backwards. The ground color is chestnut brown, with irregular blackish fasciæ across the dorsal region and upper portion of the flanks; the inferior regions are of a lighter tint than the back, and unicolor. The second dorsal and the caudal are transversally barred with black upon a yellowish ground. The other fins are uniform whitish yellow, except the first dorsal which is greyish. A vertical black streak may be seen beneath the orbit.

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Catalogue of the Coleoptera of Fort Tejon, California.

BY JOHN L. LECONTE, M. D.

The present paper contains a list of the species of Coleoptera collected at Fort Tejon, during 1857 and 1858, by the indefatigable naturalist, Mr. John Xantus, (de Vésey), which were found to be remarkable in many respects. The number of species obtained (147) is very small for the time during which they were collected, and the proportion of new species (52) is very large. These facts are in accordance with the general principles of the geographical distribution of organized beings in Pacific North America, stated by me at the meeting of the American Association for the Advancement of Science, held at Albany in 1851. Several genera not previously known to science are herein described, one of which, *Aplastus*, completes beautifully the series between normal *Elateridæ* and *Cebrio*, previously indicated by *Plastocerus* and *Euthysanius*. A large and singular species of *Hetaerius* was also found. Important is the fact that the species formerly referred by me to *Malachius*, are to be separated therefrom, as it diminishes the small number of exceptions to the principle announced by me, that no genus was common to Europe and Pacific America, without being represented in Atlantic America.

I have not included some *Staphylinidæ* in the collection, which, with the exception of a small *Isomalus*, were previously found by me in other parts of California, hoping at a future time to bring them with a vast number of other new species of that family into a monograph. Two species of *Curculionidæ* are also omitted, for the reason that it will involve more labor to determine the genera to which they belong, than I can properly devote to the subject at present.

1. *Omus californicus*. A male of this species from Fort Tejon differs from those found at San Francisco, by the thorax being much rounded on the sides, especially before the middle. Judging from analogy of distribution of other insects in California, this would indicate a difference of a specific nature. Should the occurrence of other similar specimens warrant this conclusion, the name *O. Xanti* would be appropriate.

2. *Cychrus punctatus*, ater capite thoraceque opacis alutaceis, hoc latitudine haud brevior, postice angustato lateribus marginatis, rotundatis postice sinuatis, ante basin transversim profunde impresso, elytris striis grosse punctatis, ventricosis, convexis, postice acutis. Long. .60—.68.

Abundant at Fort Tejon. Allied to *C. ventricosus* and others, but differs by the thorax being more gradually narrowed behind, and not suddenly constricted; as also by the sculpture.

3. *Cychrus striatus*, ater, capite thoraceque subopacis, alutaceis, hoc latitudine longior, postice angustato, lateribus marginatis, rotundatis postice sinuatis, ante basin transversim profunde impresso, elytris ovalibus convexis, postice acutis, striis profunde punctatis. Long. .62.

One male, Fort Tejon. Related to the preceding; but the thorax is longer, more sinuate on the sides behind, so that they become parallel, but still without being constricted. The elytra are narrower and less ventricose, the striæ are deeper and the punctures smaller.

4. *Calathus ruficollis*.

5. *Platynus cinctellus*. 6. *P. californicus*. 7. *P. fossiger*.

8. *Pterostichus contractus*. 9. *P. californicus* (*simplex* Lec.)

10. *P. vicinus* (*californicus* Lec.) 11. *P. lustrans*.

12. *Anisodactylus* (*Dichirus*) *piceus* (*parallelus* Lec.) 13. *A. brevicollis*. 14. *A. similis*.

15. *Bradycellus nitidus*.

16. *Chlenius variabilipes* (*asperulus* Mén.; *obscurus* Lec.)

17. *Hydrophilus triangularis*. 18. *H. californicus*.

19. *Neorophorus nigrita*.

20. *Silpha lapponica*.

21. *Cercus sericans*, oblongus modice convexus, fuscus, punctatus, pubescent. 1859.]

brevi cinerea sericans, capite thoraceque saepe rufo-testaceis, hoc latitudine plus sesqui brevior, lateribus rotundatis marginatis, antennis pedibusque testaceis, illis articulo 9no præcedente vix majore. Long. .07—.09.

Fort Tejon. Varies much in size and color, being sometimes fuscous, sometimes entirely pale testaceous: the usual variety has dark elytra and pale head and thorax. It differs from the types of the genus in having the antennæ very slightly thickened from the 3rd to the 9th joint, the 10th and 11th are thicker and longer than the 9th; the latter in the male is about twice the size of the 8th, in the female but little larger. The effect of this is to cause the antennæ to be only moderately clavate, instead of capitulate. This taken in connection with the more dense pubescence and punctuation, and less convex body would seem to indicate the propriety of separating this as a distinct genus, but before a general study is made of our species of the family of Nitidulidæ the attempt to define it would be premature. As in other species of the genus, the antennal grooves are entirely wanting.

22. *Carpophilus pallipennis* (*floralis* Er.). Found also in the Rio Grande valley.

23. *Carpophilus caudalis*, elongatus, depressus, piceus nitidus, subtiliter pubescens, thorace brevi, lateribus rotundatis marginatis, sat dense punctato, elytris thorace duplo longioribus, fortius marginatis, punctulatis, macula magna rubro-testacea triangulari utrinque ornatis, pedibus antennisque rufis, his clava infuscata; abdomine segmentis tribus detectis, quarto sequente paulo longiore. Long. .15.

Two females; one from Tejon, the other from Nebraska. Precisely resembles in color and sculpture *C. discoideus* Lec. (Proc. Acad. 1858, 62), but differs by the abdomen being much longer, and having three segments exposed. The latter was, however, described from a single male, and future examination may show that they are sexes of one species.

24. *Nitidula humeralis*, longiuscula, subconvexa, fusca, pubescens, thorace latitudine duplo brevior, lateribus late rotundatis, ciliatis, elytris nigricantibus, margine apicali et laterali angusto, strigisque tribus basalibus pallidis, intermedia longiore, antennis basi pedibusque pallidioribus.—Long. .16.

One specimen, Tejon. Related to *N. ziczac*, but is longer and more convex with the sides of the thorax less rounded, and with no medial angulated spot on the elytra: the three spots at the base are connected, and there is besides a slight submarginal spot near the middle. As in that species the middle and posterior tarsi are very feebly dilated.

25. *Temnochila chlorodia*.

26. *Hister sexstriatus* Lec. Found also at San Francisco.

27. *Hister remotus*, oblongus niger nitidus, parum convexus, thorace stria marginali a margine remota, subsinuata, disco intra striam punctis paucis notato, elytris striis internis duabus pone medium antice abbreviata, tertia parum abbreviatis, tribus externis marginalique integris, epipleuris bistriatis, tibiis anticis serrulatis. Long. .23.

One specimen, Tejon. Belongs to div. 9 of my arrangement, Proc. Acad. Nat. Sc. 6, 38, although very distinct from all the others found in the United States. It seems most nearly related to the European *H. neglectus*, and with it belongs to Mr. de Marseul's 6th group.

28. *Hetaerius morsus*, piceo-rufus oblongus, thorace punctato subnitido, sulco obliquo utrinque insculpto, partibus lateralibus incrassatis valde elevatis planis, opacis dense puberulis, lateribus ante medium angulatis, ante basin profunde incisis; elytris pube erecta parce vestitis, punctatis subnitidis, striis externis tribus integris; prosterno compresso, postice paulo dilatato, mesosterno plano. Long. .14.

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One specimen, Tejon. In this the most remarkable, as well as the largest species of the genus, the front is slightly concave, with a raised margin, and the tibiae are suddenly dilated and denticulate as in the others. The sides of the thorax are parallel from the base nearly to the apex, where they are suddenly obtusely angulated, and run to the anterior angles which are rounded: the incision near the base cuts across the incrassated side, leaving the posterior part a small quadrate elevated plate, the anterior portion larger, subtriangular with truncate angles, flat, opaque and densely pubescent.

29. *Saprinus lugens*. 30. *S. oregonensis*. 31. *S. lubricus*.

32. *Brontes truncatus*.

33. *Dermestes marmoratus*. 34. *D. Mannerheimii*.

35. *Attagenus rufipennis*, elongatus, niger, pubescens, thorace latitudine duplo brevior, paulo convexo, confertim minus subtiliter punctato, elytris parcius punctatis, rufo-testaceis, tarsis rufo-piceis. Long. .12.

One female, Tejon. A small species, differing from the others in my collection by the more coarse and dense punctuation of the thorax: the head is punctured like the thorax and the antennae are entirely black.

36. *Anthrenus lepidus*.

37. *Serica fimbriata*.

38. *Hoplia callipyge*. This may be a favorable opportunity to observe that recent observation has shown that *H. tristis* Mels. is the male of *H. trifasciata* Say (*primoria* Burm.), a fact that could never have been inferred from the appearance of the two supposed species.

39. *Pleocoma fimbriata*. Some fragments of this insect, found in the stomach of a woodpecker at Tejon, enable me to investigate the oral organs.

The clypeus at its inferior margin is emarginate for the insertion of a pyramidal hairy corneous labrum: the mandibles are short, pyramidal acute, with a few hairs near the apex. The maxillae are large at the base, with the lobes very small, the outer one not reaching beyond the first joint of the palpi, penicillate with long hair, the inner one much smaller, narrow and pointed; palpi slender, first joint short, 2d long, 3d one-half shorter than 2d, 4th a little longer than 3d. Mentum broadly rounded in front; ligula almost semicircular, palpi inserted on the upper face of the ligula, bases contiguous, with intermediate pencil of hairs, 3d joint longer than 2d, and the latter longer than the first. It will thus be seen that combined with the 11-jointed antennae with polyphyllous club, the characters above detailed are abundantly sufficient to establish this genus as a new group, related to Geotrupidae and Copridae, with, however, strong tendency towards the Dynastide group of Scarab. pleurosticti.

40. *Canthon simplex*.

41. *Anthaxia strigata*, lata depressa, nigro-ænea, sæpe cyaneo-variegata, thorace latitudine fere duplo brevior, lateribus rotundatis, angulis posticis subrectis, fortius reticulatim punctato, utrinque pone medium oblique impresso, elytris thorace haud latioribus, confertim fortius granulatis, fortius marginatis, parallelis, postice suboblique attenuatis et rotundatis. Long. .17—.25.

Tejon, abundant. Front moderately concave, hairy: the sides of the thorax are less rounded than in *A. expansa*, the punctures are strongly marked, and there are besides fine elevated lines, having a general longitudinal direction, connected together forming elongate meshes. In some specimens the disc of the thorax is darker than the sides. It is, perhaps, *A. æneogaster* Lap. and Gory; the description given by them contains no definite character by which to separate it from allied species.

42. *Acmaeodera connexa* nigro-ænea, cuneiformis pilis longis erectis parce 1859.]

vestita, thorace latitudine triplo brevior rude punctato, lateribus rotundatis, postice incurvis, medio late excavato, postice utrinque late impresso, elytris thorace angustioribus humeris elevatis; usque ad trientem secundum paulo, dein magis angustatis et fortiter serratis, striis punctis quadratis fortiter impressis, interstitiis parce subtiliter punctatis, maculis flavis pluribus ante medium varie conjunctis, alterisque duabus fasciiformibus pone medium fere ad suturam extensis, apice sæpe gutta flava notato. Long. .33—.47.

Tejon, numerous. Allied to *A. ornata*, but is narrower, and has the punctures of the intervals of the elytra much smaller. The spots are also different, the anterior ones forming a reticulated mass, more or less broken, extending from the base to beyond the middle, and from the margin two-thirds way to the suture. It is also allied to *A. opacula* Lec., but the sides of the thorax are not yellow, the elytra are less gradually attenuated at tip, and the spots are different.

43. *Acmaëdera retifer*, nigro-ænea, subparallela, pilis longis erectis parce vestita, thorace latitudine triplo brevior, punctato, lateribus rotundatis, medio late canaliculato, postice versus angulos oblique profunde impresso, elytris thorace haud angustioribus, ad trientem secundum vix angustatis, dein rotundatim attenuatis, fortiter serratis, striis fortiter punctatis, interstitiis parce subtiliter punctatis, maculis flavis varie connexis vittam reticulatam fere ad apicem extensam utrinque formantibus. Long. .34.

One specimen, Tejon. Allied by sculpture and marking to the preceding, but differs by the thorax not being wider than the elytra, by its sides not being suddenly incurved behind, and by the elytra being hardly attenuated from the base to the second third, and finally by the reticulated mass of small spots forming broad vitta extending nearly to the apex.

44. *Acmaëdera guttifer*, subcylindrica æneo-nigra, parce longe albo-pilosa, thorace latitudine duplo brevior, convexo, lateribus rotundatis, apice transversim impresso, basi medio profunde foveato et late excavato, fortiter punctato, elytris postice obtuse rotundatis, punctis quadratis seriatis, interstitiis subtiliter uniseriatim punctulatis, striis externis exaratis, guttis flavis ornatis, 3 discoidalibus, 5 submarginalibus. Long. .28.

Tejon. Resembles the small common species of the Atlantic States, but is abundantly distinct; the anterior discoidal spot is on the 5th and 6th spaces at the middle, the 2d on 4th and 5th at one-fourth from the apex, the 3d on the 3d and 4th half way between the second and the tip: the humeri are elevated.

45. *Limonius hispidus*.

46. *Dolopius subustus*. A variety of this species having the suture broadly fuscous and the margin of the elytra behind the middle also darkened.

47. *Sericosomus debilis*, luteo testaceus, elongatus breviter pubescens, thorace latitudine fere duplo longiore, lateribus late rotundatis, antrorsum vix angustiore, angulis posticis subcarinatis haud divaricatis, dense punctato, obsolete canaliculato, elytris striis punctatis, interstitiis subconvexis confertim punctulatis. Long. .29.

One specimen Tejon. Closely related to *S. silaceus* (*El. silaceus* Say,) and differs essentially only by the posterior angles of the thorax not diverging, but continuing the outline of the sides of the thorax.

48. *Elater cordifer*, niger, breviter pubescens, thorace opaco, confertissime punctato, latitudine paulo longiore, antrorsum sensim angustato, lateribus rotundatis, elytris late aurantiacis, macula communi nigra apicali cordiformi signatis, striis punctatis, interstitiis planis rugose punctulatis, antennis articulis 2do et 3to conjunctis 4to vix longioribus; tarsis fuscis. Long. .41.

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One specimen, Tejon: another from Sacramento Valley given me by Mr. S. S. Rathron. Resembles in appearance *E. apicatus*, but the color of the elytra is much more vivid, the intervals between the striae are flat, the thorax is much more densely punctured and without lustre. The hair on the head and thorax is entirely black, on the elytra it is yellowish.

49. *Melanactes densus*.

50. *Cardiophorus fulvipes*, plumbeo-niger, nitidus pube brevissima incanus, thorace latitudine haud longiore, convexo, lateribus valde rotundatis, dense subtilissime punctulato, obsolete canaliculato, angulis posticis haud divaricatis, elytris subtilissime punctulatis, striis punctatis, interstitiis convexis, pedibus fulvo-testaceis. Long. .36.

One specimen, Tejon. Related to *C. tenebrosus*, but with the feet red, and the thorax more rounded on the sides. Belongs to the division with tarsi and unguis simple.

APLASTUS.

Frons paulo concava, antice sensim deflexa, medio haud marginata: oculi convexi; labrum breve antice rotundatum, clypeo arcate affixum; mandibulae modice elongatae, acutae, medio obtuse dentatae: palpi articulo ultimo non longiore subcylindrico: antennae (maris) elongatae, 11-articulatae, articulo 1mo crassiore, sequentibus duobus brevioribus, 3io 2ndo sesqui longiore, haud dilatato, 4to triangulari, 3io sesqui longiore; 5—10, 4to aequalibus, 11 longiore apice acuminato. Prosternum antice late rotundatum, sutura laterali recta, postice mucronatum: coxae anticae parvae, mediae contiguae, posticae laminis intus subsubito latioribus truncatis: tarsi longiusculi, pubescentes, articulis 1—4 sensim brevioribus, 5to praecedente longiore, unguiculis integris: tibiae tenues, calcaribus parvis; abdomen 5-articulatum.

Has the appearance of an elongate *Corymbites*, (e. g. *C. appressifrons*) but is closely allied to *Plastocerus* and *Euthysanius*, from which it differs essentially only by the antennae being elongate and serrate.

51. *Aplastus speratus*, nigro-fuscus, pube cinerea vestitus, thorace latitudine fere sesqui longiore, antrorsum sensim angustato, lateribus rectis, angulis posticis elongatis valde divaricatis, punctato, postice obsolete canaliculato, elytris striis distinctis, interstitiis punctatis subconvexis. Long. .66.

Several specimens from Tejon. The antennae extend considerably beyond the base of the thorax, and being of the same length, or nearly so, in all the specimens, I infer that they are all males.

This genus most perfectly completes the line of genera from the aberrant *Elaters* like *Campylus*, through *Plastocerus* and *Euthysanius* to *Cebrio*. This resembles the *Elaters*, and *Euthysanius* the *Cebrios*. An interesting fact, though not without parallel in other families and classes of animals, is that these transition forms should all occur in one Zoological region.

52. *Plastocerus frater*. Under this name I would characterize a species very closely related in form and sculpture to *P. Schaumi*, but differing by the thorax being broader and considerably rounded on the sides. The female is of the same form as the male, but with the elytra slightly narrowed towards the tip; the wings are perfect. The antennae of the female are short and serrate. The specimens are in the collection of Mr. Henry Ulke, and I have not access to them at this present moment, but will on a future occasion make a full description of them. I will add, in passing, that the sexual characters given by me (*Trans. Am. Phil. Soc.* 10, 502,) are erroneously founded.

53. *Euthysanius lautus*. Several males and one female were procured at Tejon. The latter is one of the most remarkable forms yet found and indicates the close relation between this genus and the *Cebrioidae*. The head and

thorax are as in the male: the antennæ are longer than the head, 12-jointed, the inner angle of the 6th and 7th slightly prominent, of the 8th—11th joints gradually more prolonged into a short ramus: the ramus of the 11th almost equal to the 12th joint. Elytra covering only the first segment of the abdomen, diverging at the suture behind, and obliquely truncated with the outer angle broadly rounded. Abdomen very long, cylindrical, with seven ventral segments and a large anal plate, first segment very short. Feet entirely as in the male. Length, 1.45.

54. *Podabrus pruinus*.

55. *Podabrus Tejonicus*, supra pallidus, capite dense subtiliter punctato, pone oculos nigro, thorace punctulato latitudine paulo longiore, lateribus rectis, utrinque longitudinaliter late excavato, disco postice late excavato callis duobus notato, elytris subtilius scabro-punctatis; subtus piceus, antennarum basi, pedibusque pallidis femoribus posterioribus basi nigris. Long. .30.

One specimen, Tejon. At first view, resembles *P. cavicollis* Lec., from San Diego, but the head is more finely punctured, the thorax is comparatively wider, finely punctulate, not deeply excavated in the middle for its whole length, as in that species, and the elytra are more finely punctured: the anterior angles of the thorax are rounded, while in *P. cavicollis*, they are obliquely and broadly truncate. The ungues as in that species are broadly toothed at the base.

TANAOPS, (fam. Melyridæ.)

Antennæ frontales, in foveis insertæ: 11-articulatæ, serratæ; palpi maxillares articulo ultimo longiore acuto: labrum antice rotundatum, clypeus brevis membranaceus: tarsi simplices antici 5-articulati, maris articulis duobus paulo latioribus: abdomen segmentis ventralibus anticis medio membranaceis: caput elongatum.

A genus composed of *Malachius longiceps* Lec., (Proc. Acad. Nat. Sc. 6, 163,) and the one described below. It differs remarkably from the other genera, by the antennæ being frontal, inserted before the eyes, but not near the clypeal suture, which from the length of the head is thus much farther from the eyes than usual. The clypeus is membranous at apex, corneous at base in the type, but in the other is entirely membranous. This would seem to indicate that they were to be regarded as of different genera, but the form, sculpture and coloration, as well as the length of head and position of antennæ are so perfectly similar in both species, that it would be very unnatural to separate them. Regarding the genus as the transition form from *Malachius* with frontal antennæ and corneous clypeus to *Anthocomus* with the antennæ lateral and clypeus membranous, it will be clear that the clypeus might be variable in structure, provided other characters be impressed sufficient to distinguish the group as of generic value. We will then have two groups: 1. *T. longiceps*, with the clypeus partly corneous and the abdomen simple. 2. *T. abdominalis*, with the clypeus entirely membranous and the last three segments of the abdomen with deep reniform excavations, the last one having in addition a small cup like medial fovea.

56. *T. abdominalis*, niger nitidus, parce nigro-pilosellus, capite elongato, thorace lateribus late coccineis, elytris punctulatis limbo laterali, sutura fere ad basin, apiceque coccineis, subtus rufus, antennis pedibus postpectoreque nigris, abdominis segmentis tribus ultimis profunde excavatis. Long. .15.

Tejon, one specimen. The pygidium is black, the segment before it is black in the middle, rufous at the sides. Other specimens will be required to determine whether the curious excavations of the abdomen are sexual or specific in value.

HAPALORHINUS.

Antennæ frontales, in foveis majusculis insertæ, 11-articulatæ, pectinatæ, vel serratæ; palpi maxillares articulo ultimo longiore acuto: labrum trans-

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versum truncatum; clypeus brevis membraneus; tarsi antici 5-articulati, maris haud dilatati: abdomen articulis totis corneis, vel medio membraneis: caput breve.

A genus also intermediate between *Malachius* and *Anthocomus*, agreeing with the first in the position of the antennæ, with the second by the membranous clypeus. Besides the species here described, I refer to this genus *Malachius auritus* Lec., (Proc. Acad. Nat. Sc. 6, 165,) which differs by the antennæ being serrate in both sexes and by the ventral segments of the abdomen being corneous. In the species here made known, all the segments except the last have a wide medial membranous portion.

57. *H. mirandus*, elongatus, parallelus, capite viridiæneo, subtilissime punctulato et pubescente, thorace latitudine brevior, flavo, macula magna nigra a basi fere ad apicem extensa, elytris opacis rugosis flavis, sutura anguste nigra, scutello nigro; subtus niger, genubus anterioribus, pedibusque posticis plus minus flavis. Long. .15.

Mas antennis pectinatis, elytris flavis, apice contortis, biappendiculatis; margine summo nigricante, femoribus tibiisque posticis flavis.

Femina antennis serratis, elytris flavis, fascia latissima e plagis tribus confluentibus composita nigro-virescente, pedibus posticis nigris, genubus testaceis.

Tejon. The colors of the two sexes are so different, as to lead to error. In the male the elytra are yellow, impressed and distorted at the apex, with a small cylindrical black sutural prominence, and a wide concave external one, which is margined with black: the posterior thighs and tibiæ are yellow, the former with the upper margin black. In the female there is a long common sutural spot confluent each side with one extending nearly the whole length of the margin, forming a very wide band of a greenish color, and the posterior legs are black, with only the knees and apex of the tibiæ yellow. The penis of the male is prominent forming a long cylindrical corneous style.

58. *Byturus grisescens*.

59. *Dasytes sordidus*. 60. *D. squalidus*. 61. *D. constrictus*. 62. *D. luteipes*.

63. *Dasytes quadricollis*, oblongus nigro-æneus, pilis nigris erectis dense vestitus, subtiliter cinereo-pubescent, thorace latitudine brevior, parce subtiliter punctulato, lateribus vix rotundatis, angulis posticis rectis subprominulis, elytris dense subtilius punctatis. Long. .17.

Tejon. Related to *D. conformis* and *sordidus*, but differs from both by the sides of the thorax being scarcely rounded, with the posterior angles very distinct.

64. *D. sculptilis*, elongatus, parum convexus, thorace latitudine brevior, lateribus late rotundatis angulis anticis acutis, posticis prominulis, alutaceo, præcipue ad latera parce punctulato, linea laterali a margine remota basin ambiente insculpto, elytris alutaceis rugose punctulatis, fortiter marginatis, ad apicem anguste flavis, ano antennis pedibusque rufis, femoribus posticis apice infuscatis: unguiculis internis appendice longa instructis, externis ad basin late dentatis. Long. .15.

One specimen, Tejon. A very extraordinary species having very much the appearance of a small *Trogosita*; the last three joints of the antennæ are a little broader than the preceding. The peculiar sculpture of the thorax, a lateral line remote from the margin, and bending around close to the basal margin, is also found in *D. constrictus*, but was not previously observed by me on account of the somewhat bad condition of the specimens. It is quite obvious in those collected at Tejon; in that species, however, the ungues are both furnished with a large appendage as usual.

65. *Rhadalus testaceus*. The original of this species, together with 1859.]

many other uniques of my collection was lost in a vessel, while being sent to Prof. Lacordaire for examination. A mutilated specimen was brought by Mr. Schott from the Mexican boundary, but the arrival of a fine specimen from Tejon, enables me to study anew the characters, by the aid of Prof. Lacordaire's fourth volume.

The tarsi are not lobed beneath as formerly described by me: the appearance was produced by the agglutination of hairs. From the absence of lobes, the presence of large appendages to the claws, and the size and obliquity of the middle coxæ, the genus must be referred to the same family with *Dasytes*, though remarkably different from any other described. The eyes are rounded, prominent and coarsely granulate: the last joint of the long maxillary palpi is large and securiform, of the labial palpi triangular; the posterior tarsi have the first and second joints about equal, the third very slightly shorter, the fourth still shorter. The sixth segment of the abdomen in one specimen is exerted, in the other retracted, so as to be very small. The posterior coxæ appear precisely as in the *Cleridæ*: so that this anomalous genus must be regarded as intimately connecting *Dasytes* with that family.

66. *Cymatodera ovipennis*, fusco-castanea, pilis pallidis parce vestita, capite confertissime, thorace subtilius dense punctato, latitudine duplo longiore, ante medium parum, pone medium fortius constricto, medio transversim rugoso, pone apicem transversim impresso, elytris ad basin thoracis vix latioribus, postice sensim dilatatis, subtiliter punctulatis, striis punctatis, apicem haud attingentibus, internis brevioribus, fascia transversa pallida ad medium ornatis, antennis pedibusque pallidioribus, illis apice palpisque flavo-testaceis. Long. 40—45.

Tejon, two specimens. Resembles in form *C. angustata* Spin., but is much larger, the thorax is less densely punctured, and the striæ of the elytra are abbreviated, the internal ones ceasing at the pale band.

67. *Trichodes tenellus*.

68. *Clerus eximius*.

69. *Necrobia rufipes*.

70. *Ptinus verticalis*, nigro-piceus, elongatus, pube sordide ochracea squamiformi dense vestitus, capite inter oculos transversim impresso, thorace latitudine longiore, postice angustato et profunde constricto, medio sulcato, ad medium dentibus 4 transversim positissimis e setis erectis formatis armato; elytris latitudine fere duplo longioribus, convexis lateribus rotundatis, seriatis punctatis et longe pilosis; antennis pedibusque testaceis. Long. 17.

One female, Tejon. Has the dimensions of the female of *P. fur*, but differs very much in its characters.

71. *Sinoxylon declive*.

72. *Exops Stoutii* Lec. *Allæocnemis Stoutii* Lec. 73. *E. ovipennis*.

74. *Lyctus planicollis*.

75. *Edrotes ventricosus*.

76. *Nyctoporis carinata*.

77. *Pelecyphorus costipennis*, elongatus, ater, subopacus, thorace convexo, latitudine brevior, lateribus valde rotundatis, depresso-marginatis, rugosis, angulis posticis perobtusis, disco æqualiter sat dense punctato, elytris thorace angustioribus, sutura, margine, costisque utrinque tribus valde elevatis. Long. 63—80.

Tejon. The first and second costæ unite about one-sixth from the apex, the third commences at the margin about one-fourth from the base, and ceases opposite the confluence of the other two costæ. The apex of the elytra is strongly margined. The antennæ are moderately short, hardly attaining the middle of the thorax: the head is punctured like the thorax: the apical angle

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of the anterior tibiæ is prolonged. A variety occurs, in which the third costa is entirely wanting, and the first and second have the same origin at the base.

78. *Nosoderma diabolicum*.

79. *Nosoderma pustulosum*, sordidum, thorace obovato, latitudine longiore, angulis anticis rotundatis, posticis obtusis, dorso medio deplanato, lateribus late foveatis, tuberculis parvis subnitidis parvis, præcipue ad marginem et in medio positis, elytris intra humeros subexcavatis, medio deplanatis, ante apicem subretusis, tuberculis confertis subnitidis undique obsitis. Long. .92.

One specimen, Tejon. Of the size and form of *N. diabolicum*, but the tubercles are smaller, and less irregular, the base of the elytra is not excavated near the scutellum, and there are no velvety spots on the thorax and elytra.

80. *Nosoderma plicatum*, elongatum, nigro-sordidum, thorace obovato, latitudine longiore, angulis anticis rotundatis, posticis obtusis, subinæquali, medio granulis parvis nitidis, ad latera tuberculis parvis signato, elytris parallelis ante apicem triverrucosis, præcipue ad latera et apicem tuberculatis, costula humerali alteraque pone medium obliquis munitis. Long. .61.

Tejon, three specimens: very different from any other seen by me. The basal costa commences at the humerus, runs slightly inwards, and terminates at the middle: another oblique fold commences near the margin a little before the middle, runs parallel with the first, and ends about the third fifth; the inner anterior tuberosity is also a little prolonged in the same direction. There is a slight vestige of a costa at the base, parallel with the suture and about midway between it and the humeral costa. The antennal cavities are not so abrupt as in *N. diabolicum*.

81. *Eleodes dentipes*. 82. *E. laticollis*. 83. *E. quadricollis*.

84. *E. consobrina*. 85. *E. Veseyi*. 86. *E. scabrosa*.

87. *Eleodes scabripennis*, atra, ovata, subnitida, thorace latitudine paulo brevior, subquadrato, lateribus rotundatis, postice sensim paulo angustato, angulis posticis obtusis, dense punctato, ad latera subasperato, elytris ovalibus, thorace latoribus, dorso parum convexus, postice valde declivibus, granulis parvis inordinatis dense exasperatis, et versus suturam punctatis, tibiis muticis, prosterno postice oblique submucronato, antennis extrorsum parum incrassatis. Long. .65.

One specimen, Tejon. Of the same size and sculpture as *E. Veseyi*, but differing by the thorax being much less rounded on the sides, by the posterior angles not being at all prominent, and by the prosternum being a little more prominent behind.

88. *Amphidora osculans*. 89. *A. littoralis*.

90. *Helops rugulosus*.

91. *Helops angustus*, elongatus, æneo-niger, subnitidus, thorace latitudine haud brevior, vix convexo, lateribus rotundatis, angulis posticis subrectis, capite dense aciculato-punctato, elytris thorace paulo latoribus, striis profundis antice subpunctatis, interstitiis parce subtiliter punctulatis, antennis pedibusque rufo-piceis, palpis tarsisque piceo-rufis. Long. .31—36.

Tejon, two specimens. Quite distinct from all others known to me by the above characters.

92. *Coniontis viatica*.

93. *Coniontis abdominalis*, ovalis, subcylindrica, convexa, nigra, subnitida, thorace lateribus minus subtiliter marginatis, medio parce, lateribus densius subtiliter punctato, elytris rugosis, sat dense punctatis, abdomine confertim rugose punctato. Long. .66.

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Larger and stouter than either *C. viatica*, *affinis* or *Eschscholtzii*, having the sculpture very like *C. affinis*, but with the elytra more finely punctured: in all of those however the abdomen is very sparsely and finely punctulate, while in this it is entirely covered with a coarse, somewhat rugous punctuation.

94. *Blapstinus brevicollis*. 95. *B. pulverulentus*.

96. *Eulabis rufipes*.

97. *Eulabis brevicornis*, elongatus, nigro-piceus, capite confertim, thorace confertim minus subtiliter punctatis, hoc latitudine brevior, minus convexo, lateribus rotundatis, postice subsinuatis angulis posticis rectis, elytris subtiliter costatis, interstitiis uniseriatim punctulatis, antennis pedibusque piceis, illis capite paulo longioribus. Long. .25.

Narrower and less convex than *Eu. rufipes*, with the antennæ shorter and stouter.

98. *Tenebrio molitor*.

99. *Cœlocnemis obesa*.

100. *Platydema oregonense*.

101. *Xystropus opacus*, elongatus, niger opacus, thorace semicirculari, basi bisinuato, confertissime subtiliter punctato, elytris thorace haud latioribus, striis punctatis interstitiis vix convexis, sutura anguste rufescente. Long. .35.

One specimen, Tejon. Related to *X. brevis* (*Cistela brevis* Say) but much narrower, and with the antennæ and feet entirely black.

102. *Cistela sericea*.

103. *Prionychus cyaneus*, elongatus niger, thorace elytrisque obscure cyaneis opacis, capite thoraceque confertissime punctatis, hoc subquadrato, lateribus paulo rotundatis, elytris thorace paulo latioribus, striis punctatis, interstitiis paulo convexis, alutaceis. Long. .31.

One specimen, Tejon. Of the same size and form as *P. gracilis* (*Stenochia gracilis* Lec.) from San Diego, but differs by the blue color of the thorax and elytra, and the entirely black feet.

104. *Allecula punctulata*, elongato-ovalis, fusca, pubescens, thorace latitudine plus duplo brevior, semicirculari, confertim subtiliter punctato, basi utrinque subimpresso, elytris confertim subtiliter punctatis, striis internis distinctis, externis vagis, antennarum basi, tibiis tarsisque pallidioribus. Long. .28.

Tejon, one specimen. Differs from several species from the Atlantic States by the thorax being more finely and densely punctured.

105. *Anaspis atra*.

106. *Anaspis nubilata*, linearis, flava pubescens, subtiliter dense punctulata, thorace latitudine fere duplo brevior, semicirculari, elytris fascia lata media indeterminata nigra, antennis nigris, basi flavis; subtus fusca, pedibus flavis. Long. .09.

Tejon. No sexual appendages on the abdomen of the specimens examined.

107. *Mordella scutellaris*.

108. *Lytta smaragdula*. A specimen perhaps belonging to this species, found at Tejon, is of a purplish color, with the antennæ longer than in the type, with the external joints nearly twice as long as wide. It does not differ in any other character, and I am therefore for the present unwilling to separate it.

109. *Lytta puncticollis*.

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110. *Nemognatha scutellaris*.

111. *Pedilus punctulatus*.

112. *Asclera excavata*.

113. *Bruchus desertorum*.

114. *B. pauperculus*.

115. *Rhyncites bicolor*.

116. *Sitones californicus*.

117. *Lixus pleuralis*.

118. *Baridius nasutus*, elongatus niger, nitidus, rostro thorace haud brevior, tenni parum arcuato, seriatim punctato, fronte constricta, capite parce punctulato, thorace latitudine longiore, lateribus late rotundatis, apice breviter constricto, fortiter sat dense punctato, ad latera parce albo-pubescente, elytris striis profundis punctatis, interstitiis planis, uniseriatim punctulatis et albo-pubescentibus, antennis tenuibus, articulo 2do elongato, 3io sequente paulo longiore. Long. .18.

One specimen, Tejon.

119. *Centrinus lineellus*, breviter fusiformis, niger, subtus squamulis ochreis argenteo-nitentibus dense tectus, rostro thorace longiore, arcuato, apice remote subtiliter basi fortiter punctato, linea media laevi, capite nudo parce punctulato, thorace dense punctato, nigro-squamoso, vittis tribus latis ochreo-squamosis, elytris nigro-squamosis, profunde striatis, vittis duabus integris intermediaque basali ochreo-squamosis. Long. .12.

One specimen, Tejon. The inner vitta occupies the whole of the 2nd interval and the 3rd from the apex to within one-fourth of the base: the short basal vitta is on the 4th, and extends about one-sixth of the length: the external vitta covers the 6th interval to the middle, then occupies the 7th and 9th: a few scattered yellow scales are seen near the margin. The commissures of the abdomen and the coxæ are black. The feet are sparsely clothed with scales.

120. *Sphenophorus subcarinatus*.

121. *Sphenophorus simplex*, niger, subnitidus, rostro cylindrico, subtiliter punctato, ad basin canaliculato, capite laevi, thorace oblongo, latitudine longiore, lateribus late rotundatis, ad apicem subito constricto et tubulato, fere æqualiter punctato, ante scutellum obsolete impresso, et paulo grossius punctato, elytris striis profundis externis punctatis, interstitiis alutaceis planis subtiliter parce punctulatis, tibiis anticis intus late sinuatis, posterioribus intus unidentatis et fimbriatis, antennis piceo-rufis. Long. .32—.36.

Tejon. Varies with the legs reddish yellow: The small punctures of the intervals of the elytra are irregular on the sutural and alternate spaces, but form a single series on the second and alternate spaces: the external striæ are distinctly punctured; the interior ones appear smooth, but with a powerful lens they are seen to be slightly punctured.

121. *Callidium blandum*, elongatum rufo-testaceum, parce breviter pallide pubescens, thorace latitudine vix brevior antice parum, postice distincte constricto, lateribus rotundatis, parce punctato, elytris obscure cyaneis confertim punctatis, abdomine nigricante, antennis obscuris basi rufis. Long. .25.

Tejon. Closely allied to *C. amœnum* Say, but is narrower, with the elytra more densely punctured, the abdomen blackish, and the feet entirely rufous.

122. *Callidium obscurum*, fusco-nigrum, haud nitidum, pilis fuscis suberectis vestitus, capite thoraceque confertissime punctatis, hoc longius parce piloso, lateribus rotundatis, postice angustiore, linea obsoleta dorsali, calloque postico laevibus, elytris parce punctatis, punctis ad basin grossis, postice subtilibus, femoribus valde incrassatis, tibiis parce longe pilosis. Long. .48—.55.

Tejon. Allied to *C. dimidiatum*, but from its larger size and uniform color it looks like a *Tetropium*.

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BROTHYLUS.

Oculi rude granulati: palpi compressi, breves: antennæ simplices articulo 4to contiguus fere duplo brevior: mandibulæ apice acutæ. Thorax lateribus rotundatis tuberculo acuto armatis, dorso bicallosus, elytris apice conjunctim rotundatis. Pedes mediocres, femoribus haud clavatis, tarsis posterioribus articulo 1mo sequentes duo æquante.

Belongs to the same group with *Eburia* and *Elaphidion*, but differs remarkably by the 4th joint of the antennæ being about half as long as the 3d or 5th.

123. *B. gemmulatus*, fusco-piceus, pube brevi helva vestitus, capite thoraceque rude punctatis, hoc latitudine haud brevior, lateribus antice rotundatis, postice sinuatis, tuberculo acuto ad medium armatis, dorso ad medium utrinque tuberculo sublævi munito, elytris thorace latioribus, subtilissime rugose punctulatis, granulis majusculis parvis nitidis, postice sensim punctis fientibus. Long. .67.

Tejon, two specimens. The granules are very scattered, larger at the base, gradually becoming smaller, they are converted into punctures at the tip.

124. *Elaphidion lineare*, valde elongatum, testaceum, parce minus subtiliter albo-pubescent, thorace latitudine longiore, lateribus rotundatis, confertim grosse punctato, callo dorsali postico lævi, elytris fortiter punctatis apice emarginatis, vix bispinosis, femoribus muticis, antennarum articulis 3, 4 et 5 spina brevi apicali armatis. Long. .41.

Tejon, one specimen. Quite as slender as *Sclerocerus rigidus*.

125. *Clytus nauticus*.

126. *Acmæops falsa*, elongata, nigra, pube brevi albida incana, thorace convexo, lateribus rotundatis, postice transversim impresso, et in lateribus vix constricto, angulis posticis obtusis, rufo nitido haud dense punctato, elytris confertim punctatis, thorace latioribus parallelis apice rotundatis. Long. .28.

One specimen, Tejon. By its color this species recedes from *Acmæops* and resembles various *Leptura*, but the characters, as well as the form of thorax, belong to this genus.

127. *Toxotus nubifer*, capite nigro punctato, thorace nigro subtiliter punctulato, latitudine longiore, antrorsum angustato, antice posticeque constricto, tuberculo laterali magno obtuso, elytris humeris prominulis, postice sensim angustatis apice oblique intus truncatis, dense subtilissime punctulatis et rugosis, nigricantibus, margine basali laterali apicalique late piceo-rufo; pectoribus nigris, abdomine antennis palpis pedibusque piceo-rufis. Long. .70.

One specimen, Tejon.

128. *Leptura læta*.

129. *Leptura 6-spilota*, nigra, dense fulvo-pubescent, thorace latitudine haud longiore, convexo, confertissime punctato, lateribus rotundatis, a medio antrorsum angustato, angulis posticis parvis acutis, elytris sat fortiter punctatis, postice sensim angustatis, apice singulatim rotundatis, pallide flavis, sutura limboque toto anguste nigris, macula utrinque ante medium alterisque tribus margini cohærentibus nigris, antica angustiore, alteris magnis quadratis: femoribus rufo-testaceis, tibiis tarsisque infuscatis, antennis fuscis. Long. .24—.33.

Tejon, abundant. Belongs to the same group as *L. instabilis*, *convexa*, *cordifer*, &c.

The anterior marginal spot is only a slight dilatation of the black margin, and extends from the base one-fourth the length of the elytra: the second spot is quadrate extending from the margin half way to the suture, the third is transverse, quadrate, situated one-fourth from the apex, and sometimes nearly reaches the suture.

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130. *Tetraopes manicus*, niger, supra coccineus, breviter nigro-pubescent, thorace parce punctato, tuberculo laterali prominulo obtuse rotundato, umbone dorsali modice sed subito elevato, guttis 4 nigris solitis definito, elytris modice punctatis, gutta humerali alteraque utrinque pone medium nigris ornatis, scutello nigro, pedibus totis nigris, antennis cinereo-annulatis, articulo primo sæpe rufo-tincto. Long. .55—.61.

Tejon, abundant. Spotted like *T. b-maculatus*, but the middle of the thorax is more elevated, the lateral tubercles more prominent, the elytra less coarsely punctured, and the antennæ annulated with cinereous hair.

131. *Saxinis saucia*. Three specimens from Tejon differ from more northern specimens by the thorax and elytra being more strongly punctured. Such differences between forms presenting otherwise similar specific characters are found in several genera of Chrysomelidæ. I leave the investigation of their nature for a future occasion.

132. *Exema conspersa*. Abundant.

133. *Cryptocephalus auratus*, (*chalconatus* Mann.)

134. *Pachnephorus smaragdulus*. Abundant.

135. *Chrysochus cobaltinus*.

136. *Glyptoscelis albidus*, oblongus, obscure cupreus, densissime albo-pubescent, thorace confertim punctato, latitudine haud brevior, lateribus late rotundatis, elytris thorace latioribus confertim punctatis. Long. .30.

Tejon: a specimen from Sacramento was given me by Mr. S. S. Rathvon. Differs from *G. hirtus*, (*Eumolpus hirtus* Ol. *Eu. pini* Say,) by the punctures being smaller, by the thorax being narrower and less rounded on the sides and by the hair being of a uniform whitish color. The genus *Glyptoscelis* (Chevr.) is distinguished from the other genera allied to *Eumolpus* by the mouth not being covered beneath by the prosternum, by the claws being toothed, and by the tibiæ being longitudinally sulcate. The head is not sculptured as in *Heteraspis*.

137. *Ædionychis violascens*, ovata, convexa, chalybeo-violacea, thorace latitudine duplo brevior, antrorsum angustato, angulis anticis prominulis posticis rectis, fortiter haud dense punctato, elytris confluentur haud subtiliter punctatis. Long. .24.

Tejon, two specimens. From its color, it appears at first sight to be a *Haltica* of the division Graptodera.

138. *Phyllobrotica flavicollis*, cyanea, thorace flavo, latitudine paulo brevior, subquadrato, lateribus late rotundatis, disco postice late haud profunde impresso, elytris punctulatis, antennis basi testaceo-maculatis. Long. .28.

Tejon. Resembles in form *Galleruca atriventris* Say, and belongs to the same genus as that species, which has a remarkable peculiarity not before noticed: in the male the third joint of the antennæ is obsolete, so that the organs become 10-jointed. I have not yet examined any males of the present species.

139. *Phyllobrotica bivittata*, flava nitida, oculis vittaque elytrorum a humero fere ad apicem extensa nigris, thorace latitudine brevior, lateribus rotundatis; elytris obsolete punctulatis. Long. .18.

Fort Tejon. A very pretty little species, without any thoracic impressions.

140. *Diabrotica viridipennis*, capite flavo, occipite nigricante, thorace flavo, latitudine brevior, lateribus rectis parallelis, disco postice profunde lunatim excavato, elytris subtiliter punctulatis cyaneo-viridibus, postpectore abdomineque nigris pube albida canis, pedibus flavis, antennis fuscis, basi flavis. Long. .25.

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Tejon. I know not the value of this or the preceding genus, nor the characters upon which they rest: the habitus is sufficient to enable them to be readily recognized, but future researches will be necessary to establish them fully.

141. *Diabrotica 12-punctata*.

142. *Galleruca guttulata*. 143. *G. luteocincta*.

144. *Microrhopala signaticollis*, nigro-cyanea, capite tristriato, thorace latitudine brevior, antrosum angustato, lateribus rectis, parce grosse punctato, macula maxima laterali a basi fere ad apicem extensa rufo-flava, elytris thorace latioribus subparallelis, apice late rotundatis, punctis grossis seriatim positis, seriebus per paria paulo approximatis. Long. .23.

Tejon, one specimen. This species has the form, size, and sculpture of *Hispa cyanea* Say, except that the thorax is more sparsely punctured. The lateral yellow spots readily distinguish it from all others seen by me.

145. *Hippodamia punctulata*. 146. *H. obsoleta*.

147. *Mycetina morosa*, elongata, nigro-picea nitida, thorace vix punctulato, latitudine paulo brevior, lateribus parallelis antice rotundatis, disco concavo, inæquali, linea transversa basali medio profunde exarata extrorsum subtiliore, impressionibus basalibus brevibus profundis, elytris thorace paulo latioribus, elongato-ovalibus punctulatis. Long. .27.

Tejon, one specimen. This species has very much the same proportions as *M. laeta*, (*Epipocus latus* Lec.)

Supplement.

I have, for the purpose of making these pages a complete record of the additions to our Pacific Coleopterous Fauna, here collected notes and descriptions of species derived from various sources, which have not been mentioned in my Report on the Coleoptera of Pacific North America, for the P. R. R. Expl. of 47th Par., or in the Catalogue of Coleoptera found adjacent to the U. S. and Mex. Boundary, printed in the 4th vol. of the second series of the Journal of the Academy. I propose, from time to time, as fresh material is furnished by the kindness of my friends, to give other supplements to the Pacific Coleoptera Fauna of the United States.

1. *Dromius quadricollis*, nigro-piceus, depressus, thorace latitudine brevior, quadrato, postice subangustato, transversim rugoso, postice profundius impresso, lateribus latius marginatis pallidioribus, elytris oblongis, striatis interstitiis parum convexis, subtus piceus. Long. .28.

Puget Sound, Mr. George Davidson. Very closely allied to *D. piceus*, but differing chiefly in the form of the thorax: the latter is broader than long, scarcely narrowed behind, with the depressed margin broader, the disc more rugous, the dorsal line deeper, and the posterior transverse impression deeper; the posterior angles are also more regularly rounded, and the elytra are a little broader.

2. *Cymindis abstrusa*, picea, pubescens, capite thoraceque fortiter punctato, fronte lævi, thorace latitudine brevior, postice angustato, lateribus rotundatis postice subsinuatis, margine latius reflexo pallidior, angulis posticis obtusis, basi late rotundato, linea dorsali profunda, elytris oblongo-ovalibus nitidis, striis antice punctatis, interstitiis planis, confuse subtiliter punctatis, margine pallido, antennis castaneis, abdomine pedibusque piceo-testaceis. Long. .41.

Washington Territory, Dr. Kennerly. Of the size of *C. laticollis*, but with the elytra shining, and the thorax more broadly margined: from *C. reflexa* it differs by its larger size, broader elytra, and less coarsely punctured head and thorax; the latter is also comparatively more narrowed behind, with the posterior angles less obtuse.

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3. *Platynus bembidioides* (*Sericoda bemb.* Kirby). A specimen was found on Puget Sound by Mr. Davidson, which in no respect differs from one found by me at Lake Superior.

4. *Pterostichus herculaneus* Mann. A specimen (.70 long) was found by Mr. Davidson on Puget Sound, which apparently belongs to this species. It is related to *P. algidus*, but the two basal impressions each side run into a large fovea as in *P. coracinus*, &c., without, however, leaving any prominence or punctures between them; the little ridge adjacent to the margin is more distinct. The elytra have a faint purplish tinge as in *P. amethystinus*.

5. *Anisodactylus semipunctatus*, oblongus, niger, vel æneo-niger nitidus, capite punctulato, postice parce punctato, thorace latitudine sesqui brevior, postice subangustato, lateribus rotundatis, postice obliquis subdepressis, angulis posticis obtusis, confertim subtiliter punctato, basi utrinque paulo impresso, elytris striatis, interstitiis planis alternis parce punctulatis et breviter pubescentibus, stria 2nda postice unipunctata. Long. .45—5.

Oregon, Dr. Suckley, California. Resembles in form *A. brevicollis* Lec., but is distinguished among the black species, having the spur of the anterior tibia toothed each side at base, by the small punctures of the alternate spaces of the elytra. These punctures are sometimes, however, hardly distinct, in which case this may be distinguished from *A. brevicollis*, *consobrinus* and *californicus*, as well by differences in form, as by the sides of the thorax being more distinctly and broadly depressed, and from *A. similis* by the thorax being more narrowed behind, with the posterior angles more obtuse. I find, on careful examination, that the last named species presents traces of fine punctures on the alternate spaces of the elytra.

6. *Agonoderus rugicollis*, nigro-piceus, thorace testaceo, macula oblonga centrali nigro, latitudine haud brevior, postice paulo angustato, lateribus postice subsinuatis, basi late rotundato subdepresso punctato, angulis posticis rectis rotundatis, elytris testaceis striis profundis, 2nda unipunctata, interstitiis subconvexis, 2, 3 et 4 a quadrante ultra dodrantem nigris, antennis pedibusque testaceis. Long. .28.

California, Mr. Rathvon. Very similar to *A. dorsalis* and *pallipes*, with the posterior angles of the thorax more rounded than in the former, but less than in the latter; it differs from both by the sides being slightly sinuous, by the base being more depressed and punctured, by the disc being very distinctly rugous, and finally by the intervals of the elytra being less convex.

7. *Badister anthracinus*, niger, nitidus, thorace latitudine sesqui brevior, postice paulo angustato, angulis posticis obtusis rotundatis, anguste marginato, antice transversim impresso, linea dorsali sat profunda, basi utrinque late impresso alutaceo, elytris striis profundis, 2nda bipunctata. Long. .25.

Oregon, Dr. Suckley.

8. *Bembidium indistinctum*. 9. *B. connivens*; Oregon, Dr. Suckley.

10. *Bembidium erasum*, nigro-æneus, nitidissimus, thorace latitudine brevior, convexusculo, lateribus rotundatis postice paulo angustato, foveis basalibus profundis bistriatis, basi punctato, elytris thorace latioribus, subconvexis, striis internis 2 vel 3 subtiliter punctulatis, externis omnino oblitteratis, 3ia profunde bipunctata. Long. .17.

Oregon, Dr. Suckley. Related to *B. tetraglyptus*, but is more convex and much more shining, with the thorax narrower, and the basal foveæ deeper and punctulate; the carina at the angle is very distinct.

11. *Bembidium obliquulum*, latiusculum, æneum, thorace latitudine sesqui brevior, ante medium angustato et lateribus rotundato, angulis posticis rectis, basi transversim profunde impresso et utrinque bifeoveato, fovea externa obliqua, carina angulari minuta, elytris striis internis 4 vel 5 punctulatis, externis oblitteratis, interstitio 3io bipunctato, femoribus nigro-piceis, tibiis tarsisque piceo-rufis. Long. .24.

1859.]

California, Mr. Rathvon. Related to *B. nitidum*, (*Eudromus n. Kirby*) but differs by the less shining surface, the obliquity of the external basal fovea, and the color of the legs.

12. *Nebria livida*, aptera testacea, thorace postice angustato, lateribus parum sinuato, angulis posticis subrectis, elytris octostriatis, stria 3ia quadri-foveata, 5ta bifoveata, 6ta trifoveata. Long. .43.

Cape Flattery; Dr. Newberry. Body depressed, uniform pale testaceous; head smooth, with faint impressions. Thorax wider than the head, one half wider than long, gradually, but considerably narrowed posteriorly, sides rounded in front, very faintly sinuate behind, posterior angles slightly obtuse, not at all rounded, dorsal line entire, transverse impressions well marked, base sparsely punctured and rugous, basal impressions not elongated, lateral margin moderate. Elytra almost elliptical, with eight moderately deep striæ, not punctured, but marked with rows of brown quadrate cells in the substance, simulating punctures, the third stria has four or five punctures, the fifth has two to five behind the middle, the sixth has three or four also behind the middle, the scutellar stria is short; at the widest part they are one half wider than the thorax.

13. *Necrophilus tenuicornis*, elongato-ovalis, nigro-piceus, parum convexus, thorace latitudine duplo brevior, lateribus rotundatis indeterminate piceis, angustius depressis, parce subtiliter punctato, fortius versus latera, elytris striis subtiliter crenulatis, 2nda 4taque punctis pluribus impressis, antennis fere filiformibus, articulis externis crassitie fere duplo longioribus, pectore pedibusque piceis. Long. .22.

Puget Sound, Mr. Davidson. Much smaller and narrower than *N. hydrophiloides*, larger and narrower than *N. latus*, but specially distinguished from both by the antennæ not being thickened externally: the second joint is almost equal to the fourth, and the third is scarcely one half longer than either. By these characters it approaches *Pteroloma*, but the mandibles are not many toothed, nor are the palpi acuminate at tip, and the inner lobe of the maxillæ appears as in *Necrophilus*: the legs are also moderate in length as in the latter genus.

14. *Peltis serrata*, oblongo-ovalis, sordide atra, opaca, rude punctata setis erectis curvatis hispida, elytrorum thoracisque lateribus fortiter serratis, thorace inæquali medio elevato, canaliculato, angulis posticis elongatis spiniformibus, elytris tricostatis, internis duabus interruptis in callis magnis postice desinentibus. Long. .40.

Washington Territory, collected on the N. W. Boundary Survey, by Mr. Geo. Gibbs. This species closely resembles *P. silphides*, (*Boletophagus silphides* Newman, which was considered as identical with *P. dentata*, of Northern Europe, by Dejean.) It is however larger, somewhat narrower, and has the posterior angles of the thorax more elongated and prominent.

15. *Aulonium aequicolle*, elongatum parallelum, nigrum nitidum, capite thoraceque subtilius punctatis, hoc latitudine vix longiore, lateribus late rotundatis, lineis solitis insculptis, disco æqualiter paulo convexo, elytris punctulatis, striis punctatis postice oblitteratis. Long. .20.

Sacramento Valley, Mr. Rathvon. Of the same form and sculpture as *A. parallelipedum*, and differing only by the thorax being not at all excavated or tuberculate anteriorly, and by the sides being a little more rounded.

PSEUDOPHANUS.

Palpi maxillares articulo ultimo elongato, cylindrico; mandibulæ breves: antennæ corpore breviores, articulis externis vix crassioribus, 1mo crassiore conico paulo longiore: caput linea utrinque supraoculari insculpto; pedes mediocres, tarsi brevibus, articulo 1mo parvo, 2ndo triangulari, 3io 2ndo æquali longe bilobato, 4to vix conspicuo, 5to longiore unguiculis parvis.

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A genus having very much the form of *Telephanus*, but differing by the cylindrical palpi, and small fourth joint of the tarsi: as habitual characters, the body is more densely punctured, and the head each side has a longitudinal line running from the base of the antennæ.

16. *P. signatus*, elongatus, testaceus, pubescens, capite thoraceque dense punctulatis, hoc latitudine longiore lateribus rectis serrulatis, angulo utrinque prope apicem obtuso, disco postice vage impresso, punctis versus basin majoribus; elytris basi truncatis, humeris obtusis, striis punctatis, postice fere oblitteratis, interstitiis dense punctatis, 4to, 6to et 8vo paulo latioribus, plaga scutellari, altera communi ad medium, guttaque utrinque postica cum mediali connexa nigricantibus; antennarum articulis 8, 9 et 10 infuscat. Long. .18.

Puget Sound, Mr. Davidson. A very pretty little insect: the markings on the elytra present a scutellar triangle, and a medial spot having the form of the head of an arrow.

17. *Ceruchus striatus*, piceo-niger, nitidus, capite thoraceque grosse parcius punctatis, fronte late concava, elytris striis profundis in fundo densius, costis parcius grosse punctatis, antennis rufis. Long. .68.

One female, found at Shoalwater Bay, by Dr. Cooper, and another in Washington Territory, by Mr. Gibbs. Resembles in proportions *C. piceus*, but is much larger: the thorax is more convex and the elytra more deeply striate and much more punctured.

18. *Corymbetes tinctus*. Several specimens of a species were found by Dr. Kennerly and Mr. Gibbs, in Washington Territory, having the elytra of a metallic green or purplish color. These resemble closely in appearance *C. aeripennis*, and differ only by the thorax being less narrowed in front, more broadly rounded on the sides, and by the striæ of the elytra being deeper, the interstices slightly convex and more rugous, and by the feet being piceous tinged with rufous. *C. carbo*, besides having both body and feet entirely black, has the thorax still less narrowed in front, more strongly punctured, and the prosternum more coarsely punctured.

19. *Corymbetes protractus*, elongatus, linearis, piceo-niger, thorace longius elytris breviter cano-pubescentibus, illo latitudine fere sesqui longiore, parum convexo, crebre punctato, lateribus rectis fere parallelis, angulis posticis acutis divergentibus, haud carinatis, elytris striatis, interstitiis convexis confertim punctatis, antennis articulo 3io 4to æquali. Long. .58.

Oregon, Dr. Cooper. A very distinct species having the form of the male of *C. pyrrhus*.

20. *Dolopius opaculus*, testaceo-piceus, opacus, helvo-pubescent, thorace lateribus postice pallidioribus dense punctato, paulo convexo, latitudine sublongiore, antrorsum sensim angustato, lateribus ante medium rotundatis, angulis posticis acutis carinatis, ante scutellum breviter canaliculato, elytris a basi sensim angustatis, striis punctatis, interstitiis vix convexis, confertissime punctatis; coxis posticis laminis intus subito dilatatis, pedibus antennisque fere testaceis, his articulis 2 et 3 æqualibus, singulis 4to paulo brevioribus. Long. .27.

One specimen, Puget Sound, Mr. Davidson. Distinct from all others in my collection, by its form, which approaches that of the small *Monocrepidii* with simple tarsi, (*M. dorsalis*, &c.)

21. *Elatertartareus*, niger opacus, cuneiformis, breviter nigro-pubescent, thorace confertissime punctato, latitudine longiore paulo convexo, antrorsum sensim angustato, lateribus late rotundatis, elytris striis punctatis, interstitiis confertim scabro-punctatis, antennis valde serratis, articulis 2 et 3 parvis æqualibus. Long. .39.

Puget Sound, Mr. Davidson. Belongs to my division A. (*Trans. Am. Phil. Soc.* 10, 463,) and is related to *E. turbulentus* Lec.

1859.]

22. *Adelocera cavicollis*, nigro-picea opaca, ferrugineo subvariegata, squamis luteo-sordidis inæqualiter vestita, thorace latitudine haud longiore, lateribus undulatis antice valde rotundatis, margine late depresso et reflexo, disco triangulariter maxime excavato, et antice utrinque fovea magna impresso, elytris dorso depresso, versus latera declivibus (ita ut costa obsoleta discoidea efformatur,) sulcis tarsorum nullis, antennarum prope coxas desinentibus. Long. .65.

One specimen, found by Dr. Newberry on the shores of Tlamath Lake. Allied to *A. brevicornis* Lec., but very different by the larger and deeper excavations of the thorax.

This species is unfortunately the only relic of a large collection made along the western border of the great basin: a region in which previously no collections had been made, and from which many most interesting species may be expected.

23. *Cardiophorus fenestratus*, niger nitidus, omnium subtilissime punctulatus, pube brevissima albidoincanus, thorace latitudine haud longiore, utrinque angustato, lateribus rotundatis, modice convexo, postice obsolete canaliculato, striis basalibus elongatis, elytris striis fortius punctatis, interstitiis parum convexis, maculis rotundatis flavis, duabus ad medium, duabus ante apicem ornatis. Long. .25.

Puget Sound, Mr. Davidson. Of the same form as *C. tumidicollis* but with the thorax less convex.

PTEROTUS.

Corpus elongatum, alatum; caput breve, oculis magnis; antennæ paulo distantes, in foveis magnis insertæ, articulo 1mo brevi conico, 2ndo duplo minore, crassitie vix longiore, 3—10 elongatis, ramo interno articulo quadruplo longiore ad medium emittente, 11mo ramum præcedentis æquante. Palpi maxillares mediocres crassiusculi, articulo ultimo haud latiore: mandibulæ elongatæ, tenues, simplices. Thorax brevis trapezoideus, margine laterali et apicali reflexo. Elytra linearia, elongata apice rotundata. Coxæ anticæ et intermediae magnæ conicæ contiguae; posticæ parum prominulæ: abdomen articulis 7 ventralibus, lateribus serratum: 7mo profunde emarginato, segmento anali (maris) elliptico. Tarsi tibiis haud breviores, articulo 1mo sequentibus duobus haud brevioribus, 4to subtus lobato: unguiculari tenui longiore, unguiculis ad basin dilatatis.

A singular genus, which I have described at great length from my inability to place it properly. It seems to have a mixture of characters belonging to the Lampyrides, Telephorides and Drilides, but from the small size of the posterior coxæ is probably better placed with the latter. The antennæ are somewhat separated, inserted in large cavities, the edges of which being elevated make the front concave; it is difficult to say whether they are in front of or between the eyes. I cannot determine whether the labrum is distinct or not. The mandibles are very long, curved and slender as in Lampyrides. None of the ventral segments are phosphorescent.

24. *P. obscuripennis*, elongatus flavo-testaceus, subtiliter pubescens, thorace trapezoideo, latitudine duplo brevioribus, marginato, (latius ad latera et apicem,) punctulato, subtiliter canaliculato, elytris nigro-piceis, fortiter dense punctatis, lineis 4 parum elevatis. Long. .50.

Sacramento Valley, Mr. Rathvon.

ANORUS.

Corpus elongatum, lineare. Caput latiusculum, oculis majusculis, ore angustato, sutura clypeali distincto, clypeo brevi, trapezoideo, labro late rotundato. Antennæ distantes, ante oculos insertæ, 11-articulatæ, articulo 1mo crassiore conico, 2ndo duplo brevioribus, 3io 1mo æquali, 4—11 sensim paulo longioribus et angustioribus. Mandibulæ crassæ, acutæ. Palpi tenues, maxillares articulo ultimo longiore. Coxæ anticæ conicæ, contiguae, trochantino maximo; proster-

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no haud producto; intermediæ conicæ obliquæ, paulo distantes, mesosterno antice prominulo breviter carinato: posticæ obliquæ laminis intus sensim dilatatis: pedes mediocres, tibiis calcaribus distinctis, tarsis articulo 1mo longiore, 2 et 3 subtus lobo membraneo, 4to lobis duobus membraneis instructis, unguiculis simplicibus. Abdomen sub-6-articulatum, articulo 6to (maris?) apice rotundato, retractili.

A genus which appears to belong to the Atopidæ, though very distinct from those mentioned in Lacordaire's work.

25. *A. piceus*, piceus nitidus, minus subtiliter cinereo-pubescent, capite thoraceque punctulatis, hoc latitudine plus duplo brevior, antrorsum modice angustato, lateribus rotundatis, basi late bisinuato, elytris seriatim punctatis, substriatis. Long. .33.

San Diego, California: June. I have previously neglected to describe this insect from my uncertainty in regard to its position. I trust that the previous description will enable it to be recognized, for although there is nothing remarkable in the appearance of this dark brown, hairy narrow insect, there is hardly any genus with which it may be compared.

26. *Anobium marginicollæ*, fuscum, subtilissime punctulatum, breviter pubescens, thorace latitudine brevior, lateribus valde rotundatis fortiter marginatis, elytris thorace latioribus, elongatis, vix obsoletissime striatis, antennis articulis 3 ultimis singulatis articulos 4—8 longitudine æquantibus: oculis majusculis prominulis. Long. .21.

Puget Sound, Mr. Davidson. Belongs to the division *Dryophilus* Chev., and differs from a nondescript Pennsylvanian species given me by Dr. Melsheimer, by the thorax being strongly margined on the sides, by the last joints of the antennæ being comparatively less elongated, and by the eyes being less prominent.

27. *Anobium quadrulum*, cylindricum, piceum, pube brevi cinerea sericans, thorace latitudine brevior, inæquali, scabro, lateribus subsinuatis valde marginatis, angulis posticis subrectis, basi late rotundato, scutello densius pubescente, elytris fortiter seriatim punctatis, interstitiis subtilissime punctulatis, antennis articulis 3 ultimis conjunctis præcedentes æquantibus. Long. .18.

Puget Sound, Mr. Davidson. Allied to *A. foveatum* Kirby, but is less elongate, with the sides of the thorax less sinuous, the posterior angles not acute but subrectangular, and the base much less rounded.

28. *Anobium cornutum*, nigrum, cylindrico-ovale, subtiliter punctulatum, pube brevissima cana vix conspicua vestitum, thorace latitudine duplo brevior, modice convexo, lateribus præcipue ante medium rotundatis, basi late rotundato, angulis posticis rectis prominulis, antennarum articulis 3 ultimis conjunctis reliquos fere æquantibus. Long. .11.

Male, mandibulis cornu erecto tenui, capite sesqui longiore apice incurvo, armatis; femina mandibulis simplicibus.

California. This interesting species was sent me by Mr. Andrew Murray, as having been hatched in great numbers from some galls sent from California. The two horns of the male meet at their incurved tips.

SCOTOBÆUS.

Corpus elongatum oblongum, apterum, elytris haud connatis. Clypeus planus antice truncatus: labrum late rotundatum: mentum parvum subhexagonum medio subelevatum, apice liberum, fere truncatum: antennæ extrorsum paulo crassiores, articulo 2do brevi, externis 4 vel 5 rotundatis. Pedes mediocres, femoribus paulo clavatis, tibiis angustis, linea interna insculptis, tarsis tibiis fere duplo brevioribus, articulis subtus flavo-villoris, articulo posticoorum 1mo paulo longiore.

Allied to *Upis*, *Centrionipus*, *Nyctibates*, &c., but easily distinguished by the above noted characters.

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29. *S. parallelus*, elongatus, niger, subnitidus, capite thoraceque subtilius sat dense punctatis, hoc latitudine paulo brevior, postice paulo angustato, lateribus late rotundatis, angulis posticis acutis, elytris thorace haud latioribus, seriatis punctatis, interstitiis sat dense subtiliter punctatis. Long. .75; lat. .30.

Sacramento Valley, Mr. Rathvon. The humeri are obtuse, very slightly rounded.

30. *Phryganophilus collaris*, elongatus niger, capite dense punctato, thorace latitudine plus sesqui brevior, antice angustato, lateribus valde rotundatis, basi bisinuato, disco utrinque late transversim oblique excavato, punctulato, rufo, medio nigricante, elytris thorace haud latioribus confertissime granulato-punctatis, antennis extrorsum paulo incrassatis, articulo 3io 4to æquali; abdominis articulo ultimo rufo. Long. .33.

Washington Territory, Mr. Gibbs. The palpi and feet are destroyed: it is perhaps a *Phryganophilus*, but in the absence of an authentic type of the genus for comparison, I cannot be certain.

31. *Anaspis nigriceps*, elongata, flavo-testacea, subtiliter pubescens, transversim subtiliter strigoso, capite nigro, ore palpisque flavis, thorace latitudine duplo brevior, lateribus rotundatis, subtus fusca, antennis fuscis basi flavis, pedibus coxisque flavis, tarsis posterioribus fuscis. Long. .11.

Oregon, Dr. Suckley. Smaller than *A. pallens* Mann. and differing in the color of the head and under surface. No sexual characters observed.

32. *Elaphidion procerum*, (femina,) picea, tenuiter minus dense brevissime sordide pubescens, thorace latitudine brevior, lateribus rotundatis, in et versus latera inæquali, confluentem foveatim punctato, linea dorsali lævi, sulco basali profundiore, elytris antice modice, postice subtiliter punctatis ad apicem truncatis hispinosis, spina interna longiore, femoribus haud spinosis, antennis articulo 3io spina interna brevi, spiculoque externo obsoleto, sequentibus spinula externa alteraque interna armatis. Long. 1.50.

Umpqua Valley, Dr. Newberry. Closely resembles the female of *E. simplicicollis* Hald. (*E. pulverulentum* Hald.) but is much larger, with the sutural spine of the elytra longer than the outer one; the thorax is less rounded, much more coarsely punctured, with the basal groove deeper; the dorsal elevation is also linear, there is an anterior oblique discoidal callus each side, and the sides are quite distinctly impressed: in *E. simplicicollis* the discoidal callus is not seen and the sides are hardly impressed.

33. *Leptura xanthogaster*, elongata, nigra, opaca, capite thoraceque parce longe flavo-villosis, dense punctatis, hoc convexo, latitudine longiore, campanulato, lateribus subangulatis ante basin paulo angustato, et profunde transversim sulcato, elytris humeris elevatis, postice sensim paulo angustatis, punctatis flavis nitidis parce breviter flavo-pubescentibus, macula oblonga subhumerali, altera laterali ad medium, trienteque postico nigris, abdomine pedibusque flavis, tibiis ad apicem tarsisque anterioribus infuscatis. Long. .43.

Shoalwater Bay, Dr. Cooper. Of the same form and size as *L. crassipes* Lec., but it differs by the absence of the subapical round yellow spot of the elytra, as well as by the yellow abdomen.

34. *L. quadrillum*, nigra parum nitida, capite thoraceque confertissime punctatis, pube brevi erecta minus dense vestitis, hoc valde convexo, lateribus rotundatis, ante basin transversim sulcato, angulis posticis haud productis; elytris ad basin thorace tertia parte latioribus, humeris elevatis, a basi angustatis, ad apicem oblique truncatis, angulo externo acuto, sat dense punctatis, parce breviter pubescentibus, guttis tribus ad marginem pallide flavis ornatis, prima basali, secunda obliqua paulo ante medium, tertia pone medium, alteraque elongata pone medium subsuturali, sæpe deficiente ornatis. Long. .42.

Shoalwater Bay, Dr. Cooper, Washington Territory, Messrs. Gibbs and Ken-

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nerly. The basal spot of the margin is concealed in a dorsal view by the prominent shoulders, within which the disc is obliquely impressed. The thorax is nearly as in *L. vagans*, but the form of the elytra is very different; the species belongs in the neighborhood of *L. pubera* Say. The subsutural spot forms with the posterior lateral one a transverse band stretching forwards along the suture: there is sometimes also a scutellar yellow spot.

35. *L. lætifica*, nigra opaca, pube erecta nigra brevi parce vestita, capite thoraceque confertissime punctatis, hoc antrorsum sensim angustato, latitudine baseos vix longiore, lateribus late rotundatis, angulis posticis vix prominulis, disco postice subimpresso, ad basin marginato, elytris thorace latioribus, vix triangularibus, late coccineis opacis, antice fortiter, postice subtilius punctatis, gutta quadrata prope suturam ante medium, alteraque versus marginem ad medium, nonnunquam deficientibus, margineque apicali nigris; postice paulo dehiscentibus ad apicem truncatis, angulo externo acuto, suturis ventralibus rufo-piceis. Long. .43.

Shoalwater Bay, Dr. Cooper; Washington Territory, Mr. Gibbs. The antennæ are entirely black, subserrate and slightly thickened towards the tip, extending to the anterior fourth of the elytra. This species may be placed between the groups of *L. canadensis* and *L. vagans*.

36. *Leptura sanguinea*, nigra, opaca, pube erecta parce vestita, capite thoraceque confluentem dense punctatis, hoc ante medium antrorsum sensim angustato, latitudine paulo longiore, lateribus rotundatis, utrinque vix constricto, angulis posticis vix prominulis, elytris thorace latioribus, triangularibus, late rufis, confertim punctatis, postice paulo dehiscentibus, apice oblique truncatis et nigro-marginatis. Long. .4.

W. Territory, Mr. Gibbs. Allied to the preceding, but differs by the thorax being less narrowed in front, and the elytra much more closely punctured. The male has the thorax narrower and the outer margin of the elytra blackish.

37. *Leptura dehiscens*, minus elongata, nigra pube parca fulva erecta antice vestita, capite thoraceque dense fortiter punctatis, hoc convexo, lateribus valde rotundatis, antice multo angustiore, apice marginato, basi transversim impresso, elytris postice subangustatis obscure rubris, confertim punctatis, sutura postice rotundata valde dehiscente, apice haud acuto infuscato. Long. .5.

Oregon, Dr. Suckley. Allied to *L. vagans*, but with the punctures smaller and more dense, the elytra less triangular and not acute at apex: the antennæ are entirely black.

38. *L. lugens*, elongata nigra, opaca, capite thoraceque confertissime punctatis, pube brevi erecta parce vestitis, hoc latitudine longiore antrorsum sensim angustato, lateribus late rotundatis, ante basin transversim vix sulcato, angulis posticis paulo prominulis, elytris thorace latioribus, humeris subelevatis a basi postice paulo angustatis, postice dehiscentibus, et ad suturam rotundatis, angulo externo distincto, antice fortiter, postice subtilius punctatis, antennis corpore paulo brevioribus. Long. .42.

Shoalwater Bay, Dr. Cooper. This species might be placed near *L. nigrella*, but the posterior angles of the thorax are hardly visible, the humeral parts of the elytra are more prominent, the elytra are more dehiscent and the sutural angle altogether rounded.

39. *Syneta suturalis*, fusca, capite thoraceque dense rude punctatis, hoc lateribus bisinuatis, ad medium unidentatis, antice posticeque margine lato pallido ornato, elytris albis, sutura infuscata, seriatim punctatis, anguste marginatis, costis duabus parum elevatis intermediaque vix distincta, antennis, ore pedibusque pallide testaceis. Long. .23.

Puget Sound, Mr. Davidson. A very distinct little species, with only a single lateral thoracic tooth.

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40. *Syneta seriata*, testacea, capite thoraceque dense fortiter punctatis, hoc lateribus bisinuatis, medio obtuse lobatis, elytris seriatim punctatis, anguste marginatis, lineis duabus internis parum distinctis, externa paulo elevata. Long. .20.

California, Mr. Rathvon. Also quite distinct: there is no conspicuous lateral tooth.

41. *Anoplitis quadrata*, (*Hispa quadrata* Fabr.) A specimen from California, not differing perceptibly from those found in Pennsylvania, was given me by Mr. Rathvon.

42. *Galleruca angularis*, supra ochrea, dense pubescens, haud subtiliter dense punctata, thorace inæquali, latitudine fere duplo brevior, antice posticeque transversim impresso, canaliculato, lateribus obliquis rotundatis, basi sinuata, angulis posticis acutis prominulis, elytris vitta laterali infuscata, guttis parvis remotis serie triplici ornatis, subtus nigra, pedibus flavis, antennis fuscis. Long. .22.

California, Mr. Rathvon. Allied to *G. guttulata*, but differs by the form of the thorax and by the black elytral dots being arranged in series.

43. *Coccinella lacustris* Lec. Puget Sound, Mr. Davidson.

44. *Chilocorus pleuralis*, hemisphericus, niger, subtiliter punctulatus, elytris macula rubra magna rotundata ante medium signatis, epipleuris ante medium late rufo-marginatis, parapleuris rufis. Long. .26.

California, Mr. Rathvon. Larger than *C. bivulnerus* and *C. fraternus*, and differing from both, not only by the red spot being situated before the middle of the elytron, but by the abdomen being entirely black.

On motion, it was resolved that a committee of five be appointed to take measures for the formation of a permanent fund for the purposes of the Academy, and that the plan adopted by them be reported to the Academy for approval at the next meeting for business.

March 1st.

Vice-President BRIDGES in the Chair.

Fifty-four members present.

Dr. Robert E. Rogers exhibited Richie's modification of the Rühmkorff induction apparatus, and the modification of the ordinary electrical machine, by Prof. Wagner, of Vienna; in the original machine a large circle of wire carefully insulated is attached to the prime conductor; Dr. Rogers replaced this by hollow globes of glass silvered on the inside, and showed that the power of the machine was thus greatly increased.

On leave granted, the report of the Biological Department of the last month was read and ordered to be printed.

March 8th.

DR. HAYS in the Chair.

Thirty-five members present.

A specimen of *Lepidosteus bison*, taken at Bombay Hook, on the Delaware River, was presented by Mr. Andrew Vanderslice.

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